



---

**Chapter 1**  
Introduction

---

**Chapter 2**  
Hookups and Getting Started

---

**Chapter 3**  
Preparation

---

**Chapter 4**  
Basic Operations

---

**Chapter 5**  
Advanced Operations

---

**Chapter 6**  
Editing

---

**Chapter 7**  
Additional Information

# *Video Cassette Recorder* **Hi8**

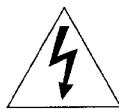
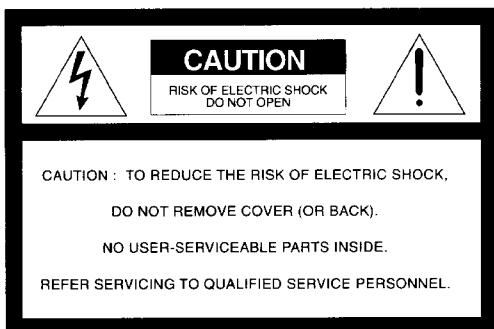
## *Operating Instructions*

Before operating the unit, please read this manual thoroughly and retain it for future reference.

# video **Hi8**

# WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.



This symbol is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

## CAUTION:

TO PREVENT ELECTRIC SHOCK, DO NOT USE THIS POLARIZED AC PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

## INFORMATION

This equipment generates and uses radio frequency energy and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio and television reception. It has been type tested and found to comply with the limits for a Class B computing device in accordance with the specifications in Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

Reorient the receiving antenna.

Relocate the equipment with respect to the receiver  
Move the equipment away from the receiver

Plug the equipment into a different outlet so that  
equipment and receiver are on different branch  
circuits.

If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions. The user may find the following booklet prepared by the Federal Communications Commission helpful:

"How to Identify and Resolve Radio-TV Interference Problems". This booklet is available from the U.S. Government Printing Office, Washington, DC 20402, Stock No.004-000-00345-4.

## Caution

Television programs, films, video tapes and other materials may be copyrighted.

Unauthorized recording of such material may be contrary to the provisions of copyright laws.

Also, use of this recorder with cable television transmission may require authorization from the cable television transmitter and/or program owner.

## Owner's Record

The model number is located at the front and rear panel, and serial number is located on the top. Record the serial number in the space provided below. Refer to these numbers whenever you call upon your Sony dealer regarding this product.

Model No. EV-S3000

Serial No. \_\_\_\_\_

# Welcome !

Congratulations on your purchase of the Sony EV-S3000 Video Cassette Recorder.  
This video cassette recorder is the result our commitment to bring Sony customers high quality and state-of-the-art technology.  
Thank you for choosing Sony.

## Table of Contents

Warning .....	2
Precautions .....	4

### Chapter 1 Introduction

How to Use this Manual .....	5
Unpacking .....	5
Overview .....	6
Identifying the Parts and Controls .....	7

### Chapter 2 Hookups and Getting Started ..12

Hookup 1 Audio/Video (A/V) Hookup .....	13
Hookup 2 Antenna Hookup .....	14
Hookup 3 Simple Cable Hookup .....	16
Hookup 4 Alternate Cable Hookup .....	18
Hookup 5 Advanced Cable Hookup .....	20

### Chapter 3 Preparation

Preparing the Remote Commander .....	23
Inserting Batteries .....	23
Setting the Command Mode .....	23
Setting the Time and Date .....	24
Presetting the Active Channels .....	25
Presetting All Receivable Channels Automatically .....	25
Presetting Desired Channels or Disabling Unwanted Channels .....	26
Fine-Tuning .....	26
Cable TV Channel Assignment .....	27
Using the SET UP MENU .....	28

### Chapter 4 Basic Operations

Playback .....	30
Inserting a Video Cassette .....	30
Ejecting the Cassette .....	30
Cassette Care .....	30
Playing Back a cassette .....	31
The Data Screen .....	32
Indexing Tape Contents .....	32
Playing Back Externally Recorded Tapes .....	32
Selecting the Monitor Sound .....	33
Recording .....	34
Recording TV Programs .....	35
Pausing .....	35
Recording with the TV Off .....	36
Watching One TV Program While Recording Another .....	36
Recording Multi-channel TV Sound Broadcasts .....	36

### Timer-Activated Recording .....

Setting the Timer .....	37
Daily/Weekly Recording .....	39
Timer Recording Standby Mode .....	39
Overlapping Timer Recordings .....	40
Checking the Timer Settings .....	41
Changing or Cancelling the Timer Settings .....	42
Using the VCR Before Timer Recording Starts .....	43

### Chapter 5 Advanced Operations

Variable Speed Playback .....	44
Still Picture .....	44
SHUTTLE Ring Operation .....	44
Picture Search (During Playback) .....	44
Locked Picture Search .....	45
Auto Play .....	45
Frame-by-Frame Picture .....	45
Slow Motion Playback .....	46
Assigning a Desired Operation — AUTO MENU .....	47
AUTO MENU Setting .....	47
Index Function .....	49
Marking Index Signals .....	49
Playing Back from the Index Point — Index Scan .....	50
Locating an Index — Index Search .....	51
Erasing Index Signals .....	52
Adjusting the Picture Quality — Sharpness/ TBC/DNR .....	53
PCM Audio Recording .....	55
Quick -Timer Recording .....	56
Cutting out the Unwanted Scenes — SHUTTLE EDIT .....	58

### Chapter 6 Editing

Overview of the Editing Functions .....	60
Tape Dubbing .....	61
Editing from Another VCR .....	61
Editing onto Another VCR .....	63
Assemble Editing/Insert Editing .....	64

Synchronized Editing .....	67
Connecting Video Equipment with the LANC connector .....	68
Connecting Video Equipment with the CONTROL S connector .....	69
LANC MODE and SHUTTLE MODE Settings .....	70
Synchronized Assemble Editing .....	71
Synchronized Insert Editing .....	74
Adding Audio or Narration (Audio Dubbing) .....	77

### Chapter 7 Additional Information

Technical Information .....	79
General Setup Information .....	80
Setting the RF UNIT .....	80
Attaching an F-type Connector .....	81
Attaching the External Antenna Connector .....	82
Attaching the EAC66 U/V Band Separator/Mixer .....	82
Troubleshooting .....	83
On-Screen Help Messages .....	85
Taking Care of Your EV-S3000 .....	86
Specifications .....	87
Index .....	Back cover

# Precautions

## Safety

- Operate the unit only on 120 V AC, 60Hz.
- If anything falls into the cabinet, unplug the unit and have it checked by qualified personnel before operating it any further.
- One blade of the plug is wider than the other for the purposes of safety and will fit into the power outlet only one way. If you are unable to insert the plug fully into the outlet, contact your dealer.
- Unplug the unit from the wall outlet if you do not intend to use it for an extended period of time. To disconnect the cord, pull it out by the plug itself, never by the cord.

## Recording and Playback

- This VCR uses 8mm video format cassettes.
- This VCR records in SP mode (approximately 1.43 cm/second) and LP mode (approximately 0.72 cm/second).
- This VCR can play back in SP mode and LP mode .
- This VCR cannot record in digital multi mode, nor can this VCR play back a tape recorded in digital multi mode on another video deck.

## Installation

- Allow adequate air circulation to prevent internal heat buildup.
- Do not place the unit on surfaces (rugs, blankets, etc.) or near materials (curtains, draperies) that may block the ventilation holes.
- Do not install the unit near heat sources such as radiators or air ducts, or in a place subject to direct sunlight , excessive dust, mechanical vibration or shock.
- Do not install the unit in an inclined position. It is designed to be operated in a horizontal position only.
- Keep the unit and cassettes away from equipment with strong magnets, such as microwave ovens or large loudspeakers.
- Keep the unit away from a TV. Otherwise, the playback picture may become distorted.
- Do not place heavy objects such as a TV on the unit.
- Do not remove the side wood panels.

## Operation

- When the unit is not in use, turn the power off to conserve energy and to extend its life.
- Remove and store video cassettes after recording or playback.

## Cleaning

- Clean the cabinet, panel and controls with a dry, soft cloth, or a soft cloth slightly moistened with a mild detergent solution.
- Do not use any type of solvent, such as alcohol or benzine.

# How to Use This Manual

This manual is divided into the following seven chapters: Introduction, Hookups and Getting Started, Preparation, Basic Operations, Advanced Operations, Editing, and Additional Information.

## Chapter 1 Introduction

This chapter describes the principal features of the EV-S3000. "Identifying Parts and Controls" is useful to overview the functions you can take advantage of when operating the EV-S3000.

## Chapter 2 Hookups and Getting Started

This chapter describes how to connect the EV-S3000 to a TV and/or an audio system. Connections for viewing cable TV programs are also explained in this section.

## Chapter 3 Preparation

This chapter describes how to prepare the Remote Commander and how to set the date and time. Presetting the Active Channels and Using the SETUP Menu are also explained in this chapter.

## Chapter 4 Basic Operations

This chapter provides information about the VCR's basic operations such as playing back a tape, recording a TV program and timer-activated recording. If you are already familiar with the basic operations, see the chapter "Advanced operations".

## Chapter 5 Advanced Operations

This chapter describes various kinds of functions you can take advantage of when operating the EV-S3000. Read this chapter after you become familiar with the EV-S3000.

## Chapter 6 Editing

This chapter describes how to edit a video tape onto or from another VCR or video camera recorder.

## Chapter 7 Additional Information

This chapter includes technical information which explains the Hi8 video system utilized in the EV-S3000 and its compatibility with existing video recorder decks. General setup information, a troubleshooting section, specifications, and index are also explained in this section. If you have any problems with installing or operating the EV-S3000, refer to the troubleshooting section first before calling your local Sony dealer.

# Unpacking

Unpack all the items and check to confirm that you have everything listed below.

- Remote Commander RMT-V120 (1)
- Size AA (R6) batteries (2)
- External antenna connector (1)
- 75-ohm coaxial cable with F-type connectors (1)
- Audio/video connecting cable (3 phono to 3 phono) (1)
- S VIDEO connecting cable (1)
- LANC  cable (1)

# Overview

## High quality picture

- **Hi8 video system**

The Hi8 video format features 400 lines of horizontal resolution, enabling you to obtain a high video quality even for dubbing and audio dubbing.

## High quality sound

- **PCM Audio system**

A digital audio sound can be recorded and erased independently of the Hi-Fi stereo sound.

- **Hi-Fi stereo system**

Hi-Fi stereo sound can be recorded on the standard track, and gives a live stereo sound atmosphere.

## Functions

- **TBC (Time Base Corrector) function**

Allows a great reduction of jitter during playback.

- **DNR (Digital Noise Reduction)**

Allows a picture of good quality with noise reduced using field memory.

- **Timer recording of six programs in a month**

Recording of up to six TV programs can be preset up to one month in advance.

- **Index function**

The beginning of a desired scene can be located easily with the index search function.

## On-screen display

- **Data screen**

Tape counter, tape recording speed and operation mode can be displayed on the TV screen.

- **PROGRAM LIST display**

Timer recording settings can be checked, changed and cancelled by referring to the TV screen.

- **ON SCREEN HELP messages**

The VCR gives a message on screen with a beep tone to warn that you have attempted an incorrect operation.

## Editing

- **EDIT SHUTTLE ring**

Allows quick access to the desired scene and playback in various speeds in forward and reverse direction.  
Also allows searching for a desired editing point quickly.

- **Control L  (LANC) jack**

Allows connection with another video equipment such as a video camera recorder (camcorder), controlling tape transportation easily. Furthermore, simultaneous control of both devices is enabled for bi-directional synchronized editing.

- **CONTROL S INPUT jack**

Allows remote control of this VCR by other Sony video equipment or a Sony TV with a CONTROL S OUTPUT jack.

- **Input connectors on the front panel**

Allows easy connection to a video camera recorder (camcorder).

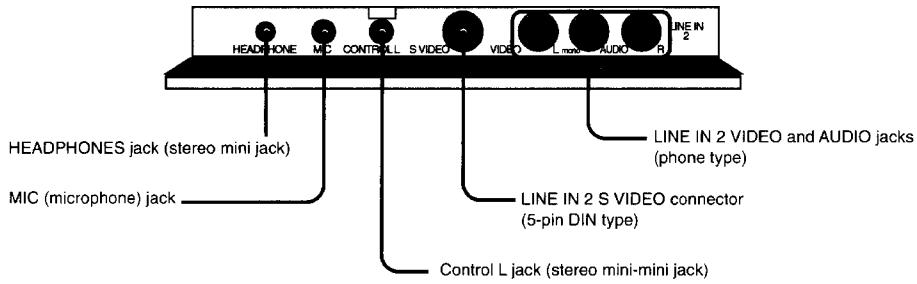
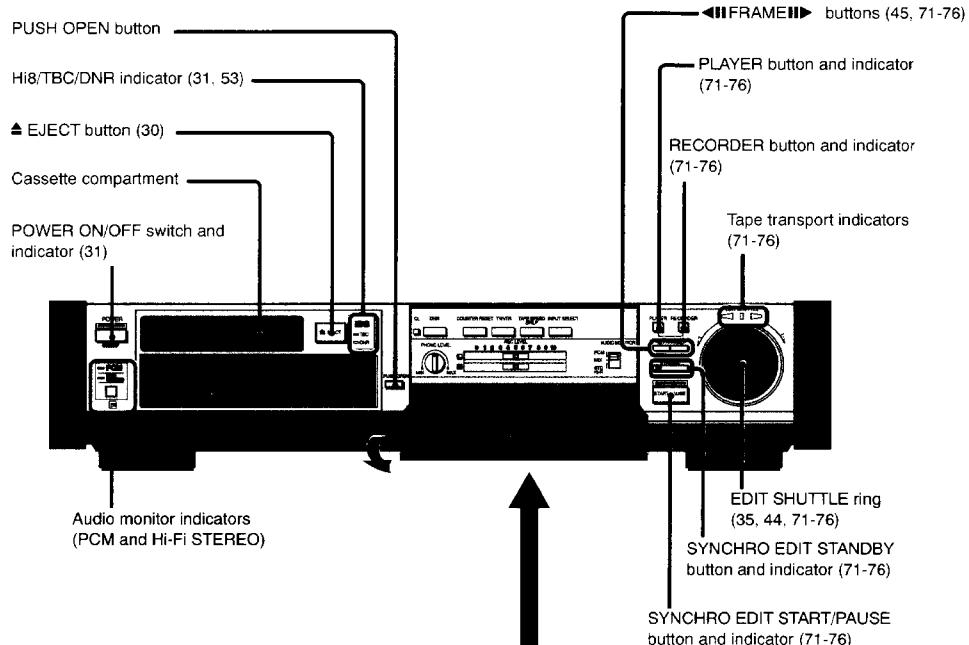
- **Audio dubbing function**

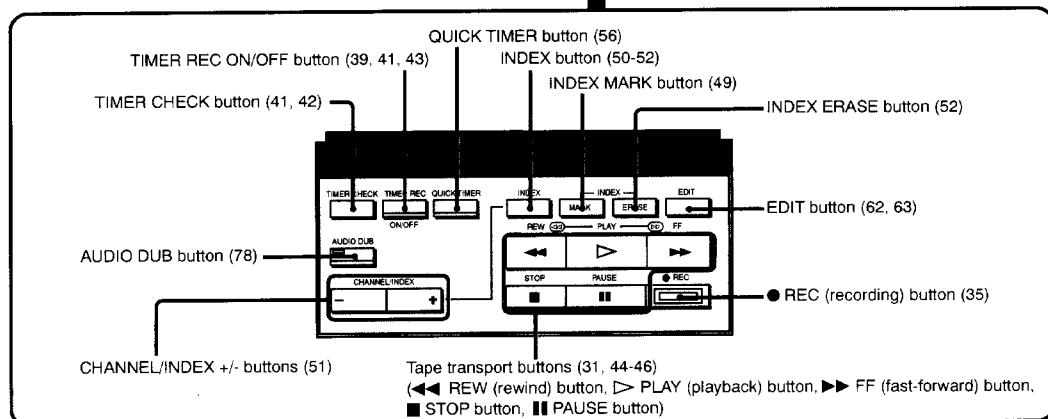
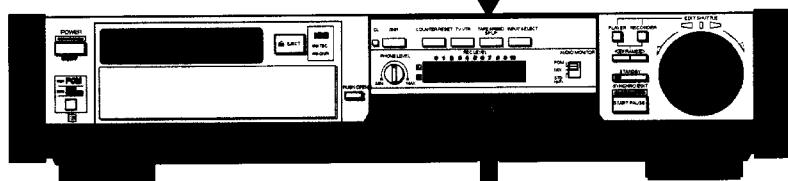
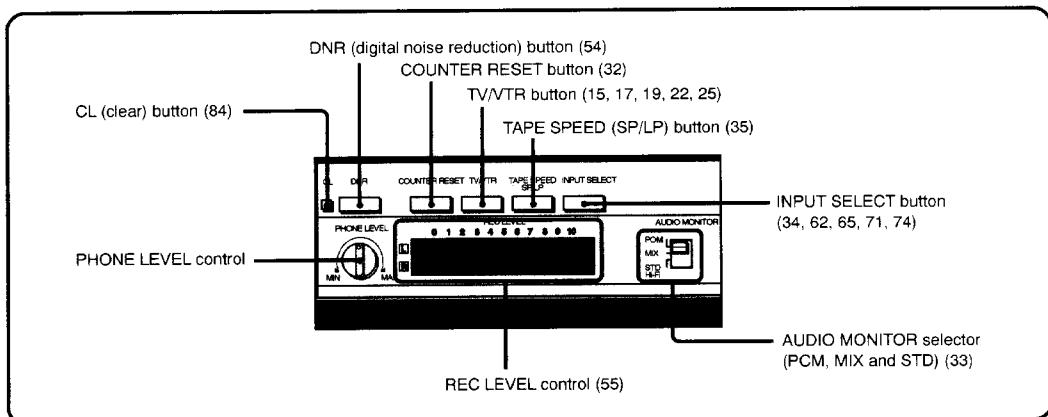
Allows adding narration or background music to a recorded picture.

# Identifying the Parts and Controls

## Front Panel

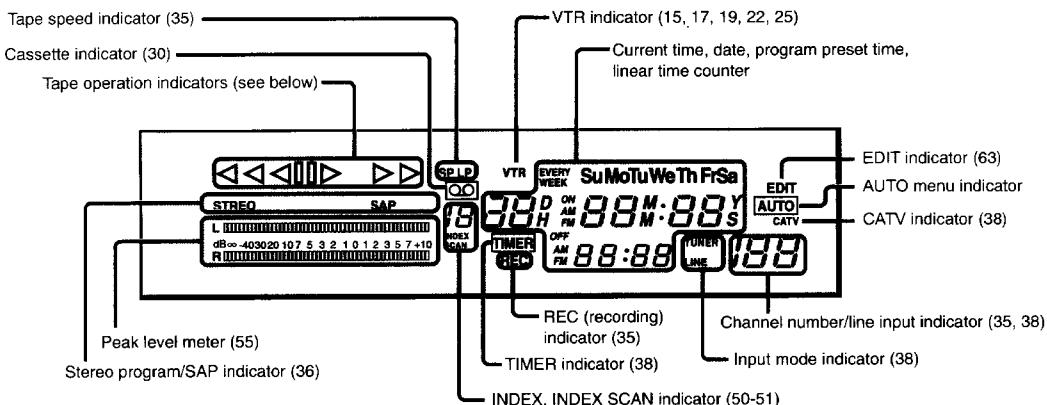
The function of each control is explained on the page indicated in parentheses ( ).





# Display Window

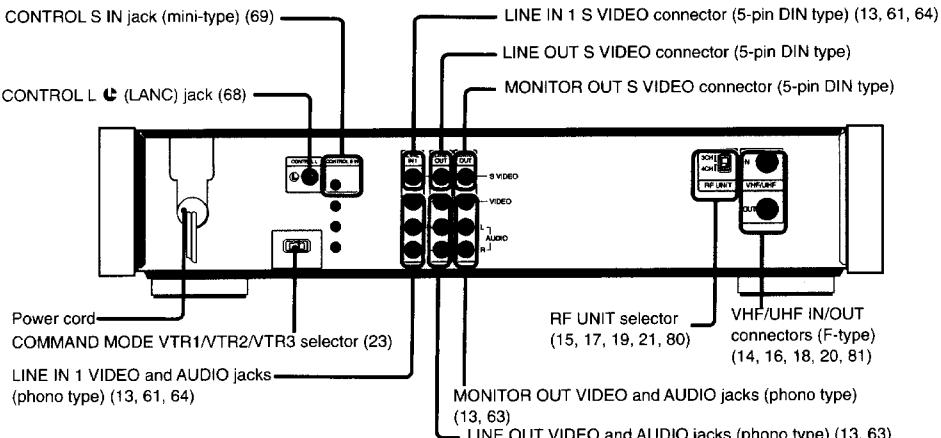
Each indication is explained on the page indicated in parentheses ( ).



	Recording		Slow playback, frame playback (reverse)		Picture search, locked picture search (forward)
	Recording pause		Play pause (forward)		Picture search, locked picture search (reverse)
	Playback, double speed playback (forward)		Play pause (reverse)		
	Playback, double speed playback (reverse)		Fast forward		Auto play (REW-PLAY)
	Slow playback, frame playback (forward)		Rewind		

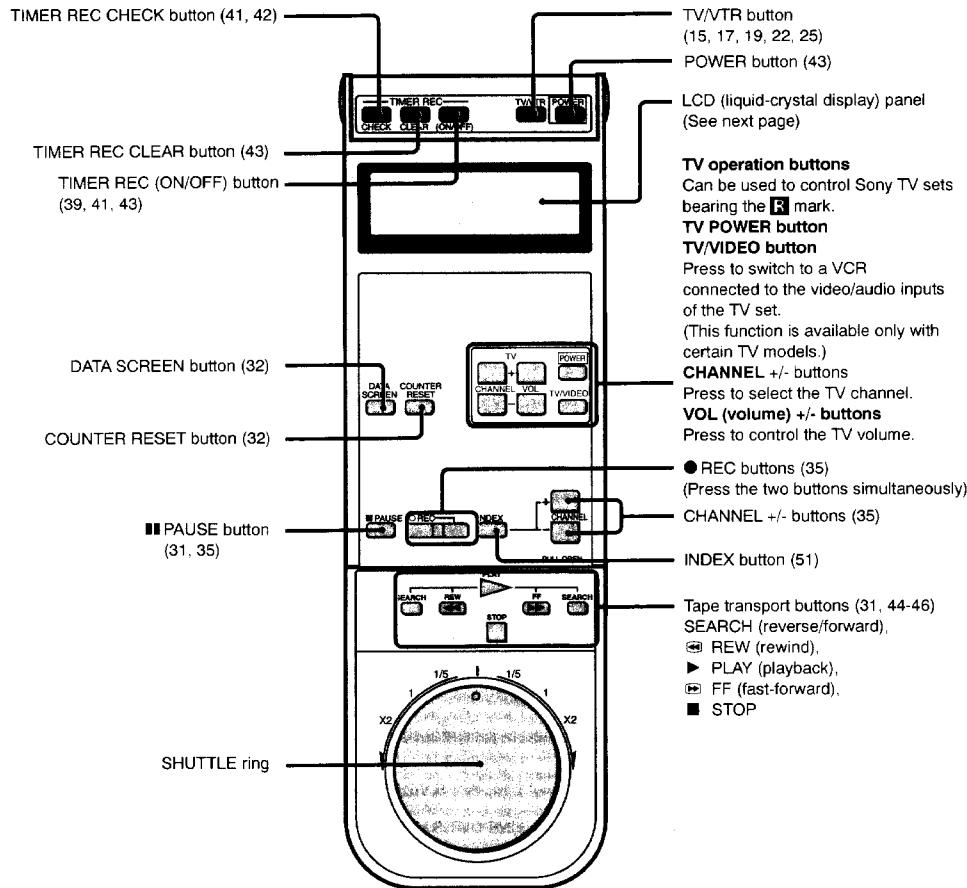
## Rear Panel

The function of each control is explained on the page indicated in parentheses ( ).



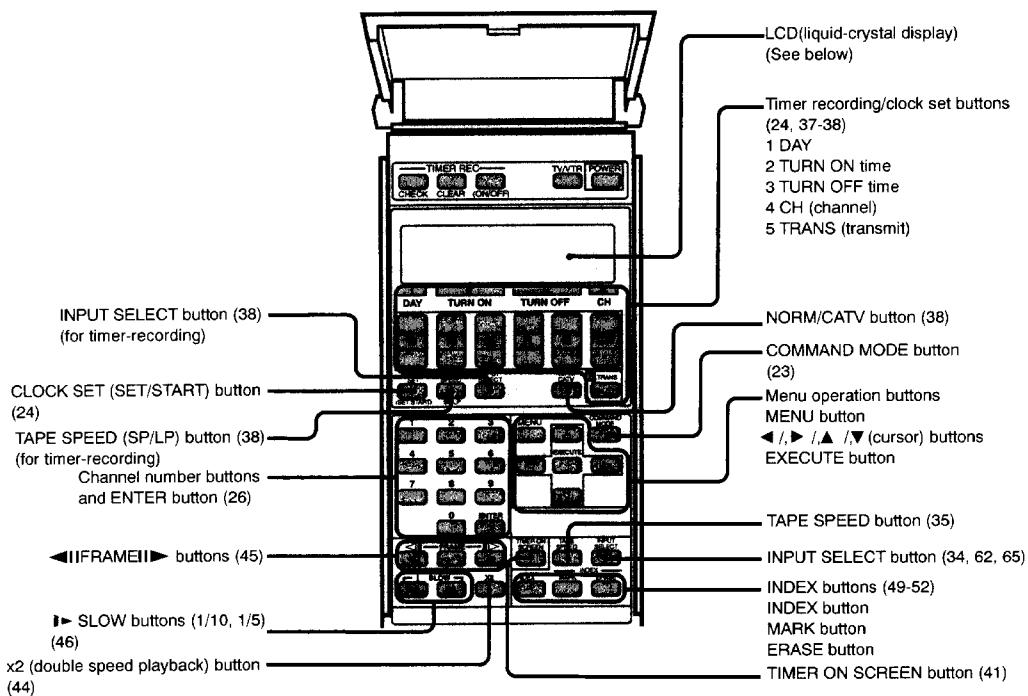
# Remote Commander (Cover Closed)

The function of each control is explained on the page indicated in parentheses ( ).



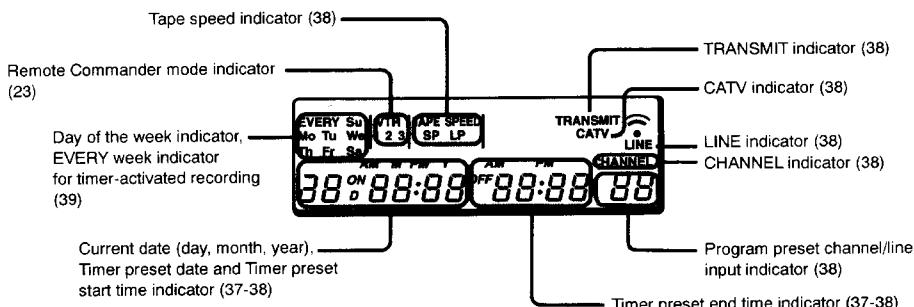
# Remote Commander (Cover Opened)

The function of each control is explained on the page indicated in parentheses ( ).



## LCD (Liquid-crystal display)

Each indication is explained on the page indicated in parentheses ( ).



# Hookups and Getting Started

Before you can use your VCR for the first time, you need to connect it to your TV and set it up to receive programs for viewing and recording. This section explains how to hook up, set up, and operate your VCR so that you can start enjoying it right away. There are, however, many types of TVs available and many different ways in which your TV can be hooked up. As a result, this manual describes several ways your VCR can be connected.

To hook up your VCR so that it works best for you, first scan through this section to find the diagram that best illustrates the way your TV is presently connected (antenna or cable/cable box). And then use the accompanying diagrams and procedures to complete your VCR's connections.

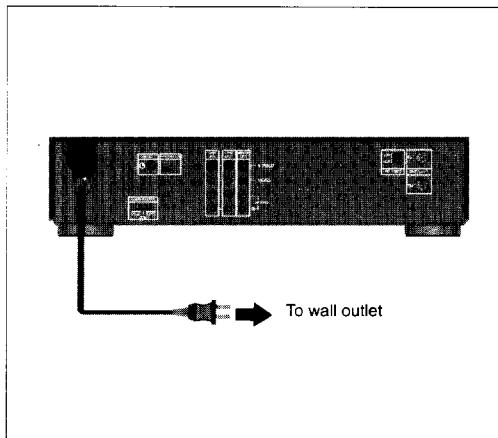
When	See
Your TV has audio/video (A/V) inputs	<b>Hookup 1</b> Audio/Video Hookup (page 13)
Your TV doesn't have audio/video (A/V) inputs	<b>Hookup 2</b> Antenna Hookup (page 14)
You have cable, and record only unscrambled channels	<b>Hookup 3</b> Simple Cable Hookup (page 16)
You have cable, and record scrambled and unscrambled channels	<b>Hookup 4</b> Alternate Cable Hookup (page 18)
You have cable, and use A/B switch	<b>Hookup 5</b> Advanced Cable Hookup (page 20)

After you've completed the connections, follow the instructions for setup. (During setup, if you need more details of the procedures described, page numbers are provided where you can find complete, step-by-step instructions.)

After you've completed the setup, you're ready to use your VCR. Follow the instructions provided in "To watch TV," "To Watch the VCR," "To Record a program using the timer," for your specific hookup. (Again, if you need step-by-step instructions, page numbers are provided where you can find these instructions.)

Before making the connections, check the following points:

- Turn off the power to the VCR and TV.
- Do not connect the AC power cord until all of the connections are completed.



## Caution

Connections between the VCR VHF/UHF OUT connector and the antenna terminals of a TV receiver should be made only as shown in the instructions. Failure to do so may result in operation that violates the regulations of the Federal Communications Commission regarding the use and operation of RF devices. Never connect the output of the recorder to an antenna or make simultaneous (parallel) antenna and recorder connections at the antenna terminals of your receiver.

## NOTE TO CATV SYSTEM INSTALLER IN THE U.S.A.

This reminder is provided to call the cable TV system installer's attention to Article 820-40 of the NEC that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.

## Caution

Do not place the VCR near a TV. The playback picture may become distorted.



- Make connections firmly. Loose connections may cause picture distortion.
- If your TV doesn't match any of the examples provided, consult your nearest Sony dealer or qualified technician.

# Hookup 1

## Audio/Video (A/V) Hookup

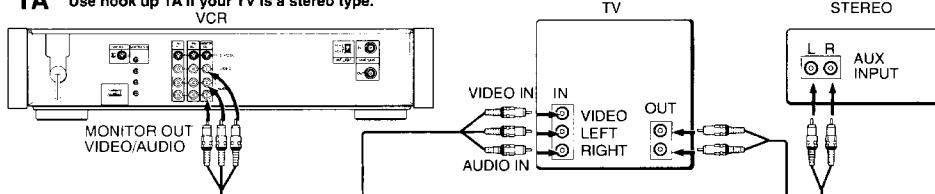
If your TV has audio/video (A/V) input jacks, you will get a better picture and sound if you hook up your VCR using these connections. In addition, for a true "home theater" experience, you should connect the audio outputs of your VCR or TV to your stereo system. If your TV doesn't have A/V inputs, see the following pages for antenna or cable hookup.

If you only wish to play back movies, you're finished after you've made these connections. If you want to record programs off the air or off your cable TV system, please make the A/V hookup on this page first, then proceed to the following pages for antenna or cable hookup.

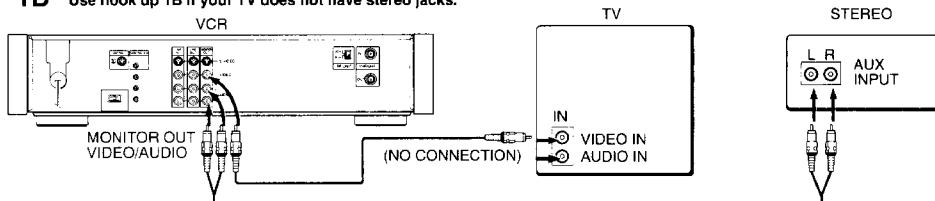
### Note:

- When you use the LINE OUT jacks instead of the MONITOR OUT jacks, you can't perform setup operation.

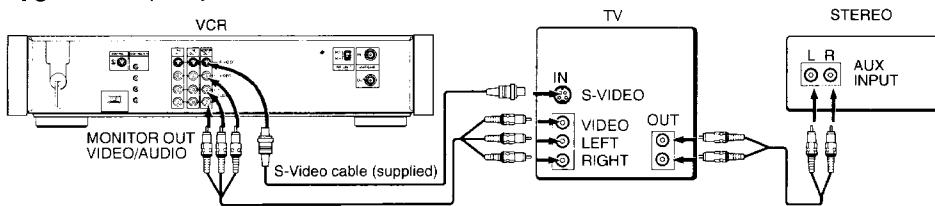
### 1A Use hook up 1A if your TV is a stereo type.



### 1B Use hook up 1B if your TV does not have stereo jacks.



### 1C Use hook up 1C if your TV has an S-VIDEO INPUT connector.

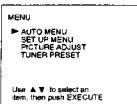


After you've hooked up your TV using the A/V connections, use the following procedure to set up and use the VCR with your TV.

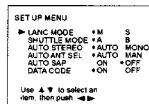
## A/V Setup and Operation

Set the AUTO ANT SEL setting to MAN.

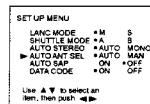
Press MENU.



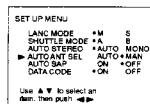
Select SET UP MENU.



Select AUTO ANT SEL.



Set to MAN.



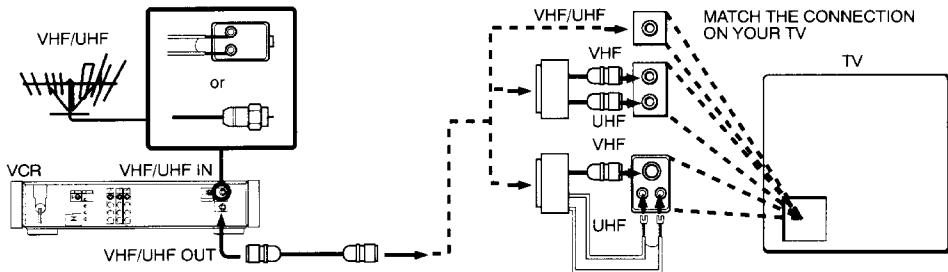
Details are on page 28.

## **Hookup 2**

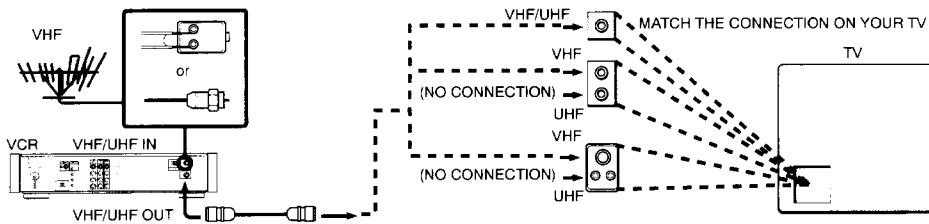
### **Antenna Hookup**

Make the following connections if you're using an antenna (not a cable TV).

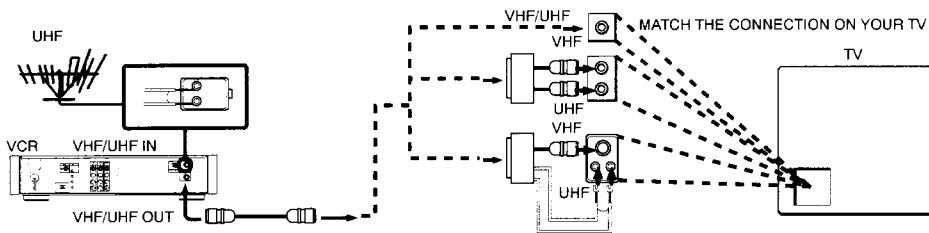
**2A** Use hookup 2A for a VHF/UHF antenna (you get Ch 2-13 and Ch 14 or higher).



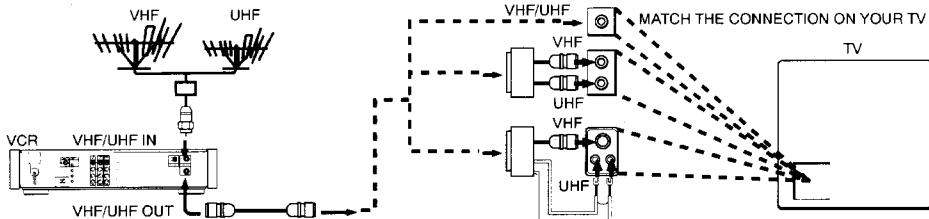
**2B** Use hookup 2B for VHF only (you get Ch 2-13 only).



**2C** Use hookup 2C for UHF only (you get Ch 14 or higher).



**2D** Use hookup 2D if you're using separate VHF and UHF antennas.



Details are on pages 81 and 82.

## VCR Setup (Antenna)

### 1 Set the RF UNIT on the VCR's rear panel to 3CH or 4CH.

If you made A/V connections, skip this adjustment.



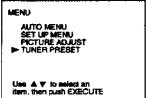
Set to whichever channel is not used in your area.  
If both are used, pick either channel.

Details are on page 80.

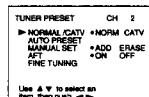
### 2 Set NORMAL/CATV to NORM.

Press MENU.

Select TUNER PRESET.



↓  
Set to NORM.

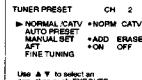


Details are on page 25.

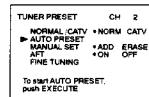
### 3 Preprogram the channels into the VCR.

Press MENU.

Select TUNER PRESET.



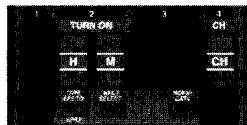
↓  
Select AUTO PRESET,  
then press EXECUTE.



Details are on page 25.

## Clock Setting

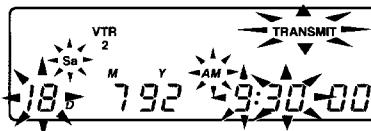
### 1 Open the cover of the Remote Commander.



### 2 Press CLOCK SET.

### 3 Press DAY to set the date, month and year.

### 4 Press H (hour) and M (minute) under the TURN OFF section to set the hour and minute.



### 5 Transmit the setting to the VCR with TRANS, and close the cover.

Details are on page 24.

## To Watch TV

- 1 Turn your VCR off, or press the VCR's TV/VTR button until the VTR indicator in the display window goes off.
- 2 Tune the TV normally.

## To Watch the VCR

- 1 Tune the TV to Ch. 3 or 4, whichever you set on the back of the VCR (If you made the A/V connections on page 13, set your TV to the A/V input instead.)
- 2 Insert a cassette and press ▶ PLAY.
- 3 If there's no picture on your TV, press the VCR's TV/VTR button until the VTR indicator appears in the VCR's display.

Details are on page 31.

## To Record a Program Using the Timer

- 1 Insert a cassette.
- 2 Open the cover of the Remote Commander.
- 3 Press DAY, TURN ON, TURN OFF and CH to set date, start time, end time and channel number.
- 4 Transmit your programmed timer data with TRANS.

Details are on pages 37 and 38.

## Hookup 3

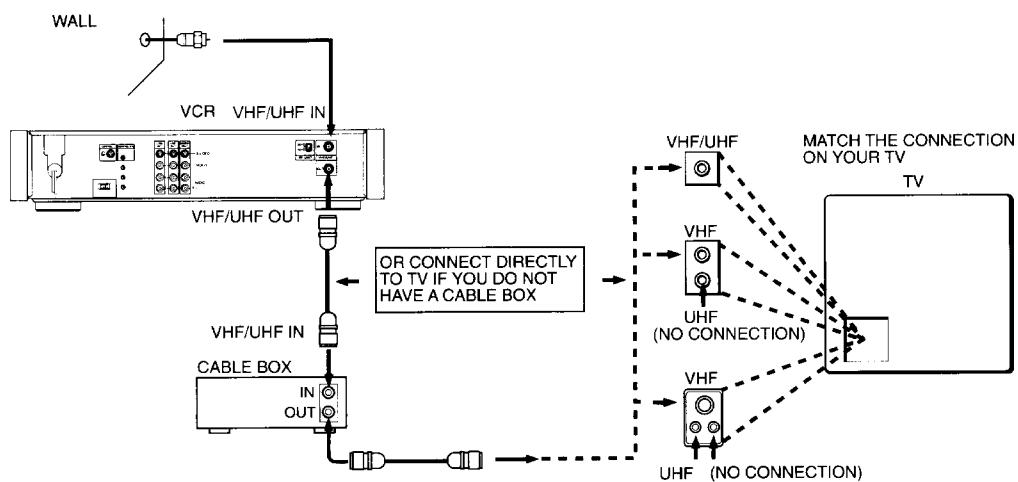
### Simple Cable Hookup

#### Recommended Use:

Since this is the simplest hookup, we recommend that you try this hookup first. If you cannot record the channels you want, you'll need to change your hookup to one of the choices on the following pages, or contact your cable company for assistance.

#### Background

This VCR can record virtually any unscrambled cable channel. Some cable systems "scramble" specific channels, usually premium or pay-per-view channels. You will not be able to record scrambled channels with this hookup.



#### What You Can and Can't Do With This Hookup

##### What You Can Do

- Record any unscrambled channel directly, without using a cable box.

##### What You Can't Do

- Record scrambled channels that require a cable box.

## VCR Setup (Simple Cable)

### 1 Set the RF UNIT on the VCR's rear panel to 3 CH or 4 CH.

If you made A/V connections, skip this adjustment.



Set to whichever channel is not used in your area.  
If both are used, pick either channel.

Details are on page 80.

### 2 Set NORMAL/CATV to CATV.

Press MENU.

Select TUNER PRESET.

MENU  
► AUTO MENU  
► PICTURE MENU  
► PICTURE ADJUST  
► TUNER PRESET  
  
Use ▲▼ to select an item, then push EXECUTE

MENU  
► AUTO MENU  
► PICTURE MENU  
► PICTURE ADJUST  
► TUNER PRESET  
  
Use ▲▼ to select an item, then push EXECUTE



Set to CATV.

TUNER PRESET CH 1  
► NORMAL/CATV NORM+CATV  
► AUTO PRESSET NORM+CATV  
► MANUAL SET NORM+CATV  
► AFT ERASE \*ON OFF  
► FINE TUNING  
  
Use ▲▼ to select an item, then push EXECUTE

Details are on page 25.

### 3 Preprogram the channels into the VCR.

Press MENU.

Select TUNER PRESET.

MENU  
► AUTO MENU  
► PICTURE MENU  
► PICTURE ADJUST  
► TUNER PRESET  
  
Use ▲▼ to select an item, then push EXECUTE

MENU  
► TUNER PRESET CH 1  
► NORMAL/CATV NORM+CATV  
► AUTO PRESSET NORM+CATV  
► MANUAL SET NORM+CATV  
► AFT ERASE \*ON OFF  
► FINE TUNING  
  
Use ▲▼ to select an item, then push EXECUTE



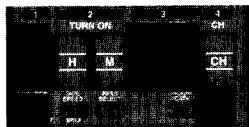
Select AUTO PRESSET,  
then press EXECUTE.

TUNER PRESET CH 1  
► NORMAL/CATV NORM+CATV  
► AUTO PRESSET NORM+CATV  
► MANUAL SET NORM+CATV  
► AFT ERASE \*ON OFF  
► FINE TUNING  
To start AUTO PRESSET,  
push EXECUTE

Details are on page 25.

## Clock Setting

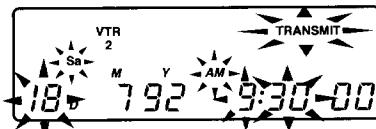
### 1 Open the cover of the Remote Commander.



### 2 Press CLOCK SET.

### 3 Press DAY to set the date, month and year.

### 4 Press H (hour) and M (minute) under the TURN OFF section to set the hour and minute.



### 5 Transmit the setting to the VCR with TRANS, and close the cover.

Details are on page 24.

## To Watch TV

- 1 Turn your VCR off, or press VCR's TV/VTR button until the VTR indicator in the display window goes off.
- 2 Select the channel with your cable box (if you have one), or directly tune with your TV (if you don't).

## To Watch the VCR

- 1a If you didn't use the A/V input:
  - Turn on the cable box.
  - Select Ch 3 or 4 on the **cable box** (whichever you set on the back of the VCR).
  - Select the output channel of the cable box (usually 2, 3 or 4) on your TV.
- 1b If you made the A/V connections on page 13:  
Set your TV to the A/V input.
- 2 Insert a cassette and press ▶ PLAY.

Details are on pages 31.

## To Record a Program Using the Timer

- 1 Insert a cassette.
- 2 Open the cover of the Remote Commander.
- 3 Press DAY, TURN ON, TURN OFF and CH to set date, start time, end time and channel number.
- 4 Transmit your programmed timer data with TRANS.

Details are on pages 37 and 38.

## Hookup 4

### Alternate Cable Hookup

#### Recommended Use:

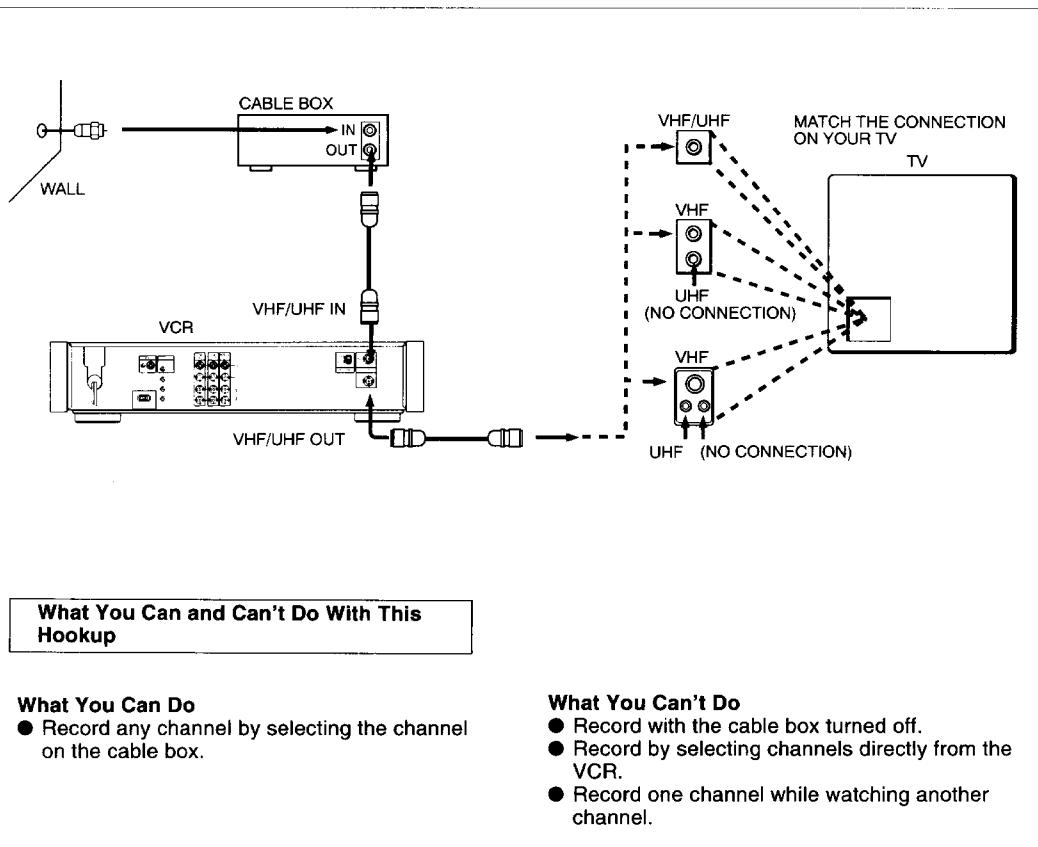
This hookup will allow you to record either scrambled or unscrambled channels; however, you will have to set the channel on the cable box for each program you want to record. If your cable system scrambles all or most channels, you **must** use this hookup. If your cable system only scrambles a few channels, you may prefer **Hookup 3** or **5** (on pages 16 and 20, respectively).

Please note that **Hookup 3** will not allow you to record scrambled channels.

**Hookup 5** will allow you to record either scrambled or unscrambled channels, but will require that you purchase a few extra parts at your local electronics store.

#### Background

This VCR can record virtually any unscrambled cable channel. Some cable systems "scramble" specific channels, usually premium or pay-per-view channels. Although this hookup will also allow you to record these scrambled channels, you must use the cable box rather than the VCR to select channels.



#### What You Can and Can't Do With This Hookup

##### What You Can Do

- Record any channel by selecting the channel on the cable box.

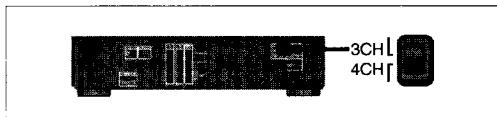
##### What You Can't Do

- Record with the cable box turned off.
- Record by selecting channels directly from the VCR.
- Record one channel while watching another channel.

## VCR Setup (Alternate Cable)

- Set the RF UNIT on the VCR's rear panel to 3 CH or 4 CH.

If you made A/V connections, skip this adjustment.

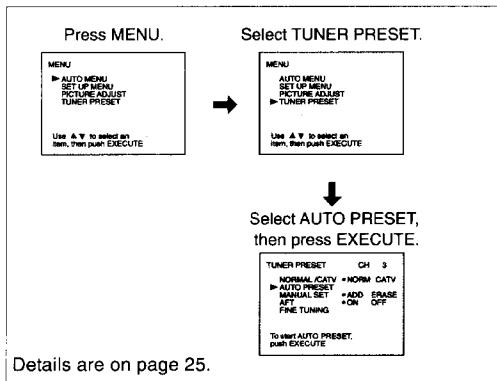


Set to whichever channel is not used in your area.  
If both are used, pick either channel.

Details are on page 80.

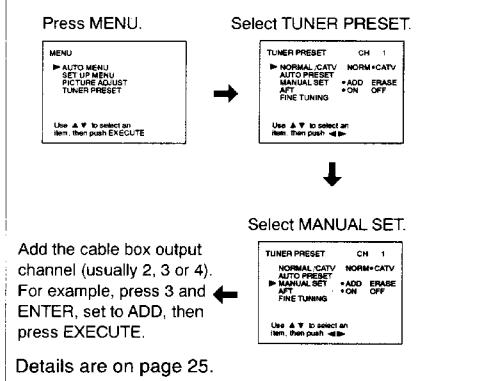
- Switch on your cable box .

- Preprogram the channels into the VCR.



Details are on page 25.

- Add the cable box output channel (usually 2, 3 or 4).



Add the cable box output channel (usually 2, 3 or 4).  
For example, press 3 and ENTER, set to ADD, then press EXECUTE.

Details are on page 25.

## Clock Setting

- Open the cover of the Remote Commander.



- Press CLOCK SET.

- Press DAY to set the date, month and year.

- Press H (hour) and M (minute) under the TURN OFF section to set the hour and minute.



- Transmit the setting to the VCR with TRANS, and close the cover.

Details are on page 24.

## To Watch TV

- Turn your VCR off, or press the VCR's TV/VTR button until the VTR indicator in the display window goes off.
- Switch on your cable box.
- Tune the TV to the cable box output channel (usually 2, 3, or 4).
- Select the channel that you want to watch with your cable box.

## To Watch the VCR

- Tune the TV to Ch 3 or Ch 4 (or to A/V input if you made A/V connections).
- Insert a cassette and press ▶ PLAY.

Details are on page 31.

## To Record a Program Using the Timer

- Insert a cassette.
- Switch on the cable box.
- Select channel you wish to record on the cable box.
- Open the cover of the Remote Commander.
- Press DAY, TURN ON, TURN OFF and CH to set date, start time, end time and channel number. The channel number must be the same as the cable box output channel.
- Transmit your programmed timer data with TRANS.
- Leave the cable box ON.

Details are on pages 37 and 38.

## Hookup 5

### Advanced Cable Hookup

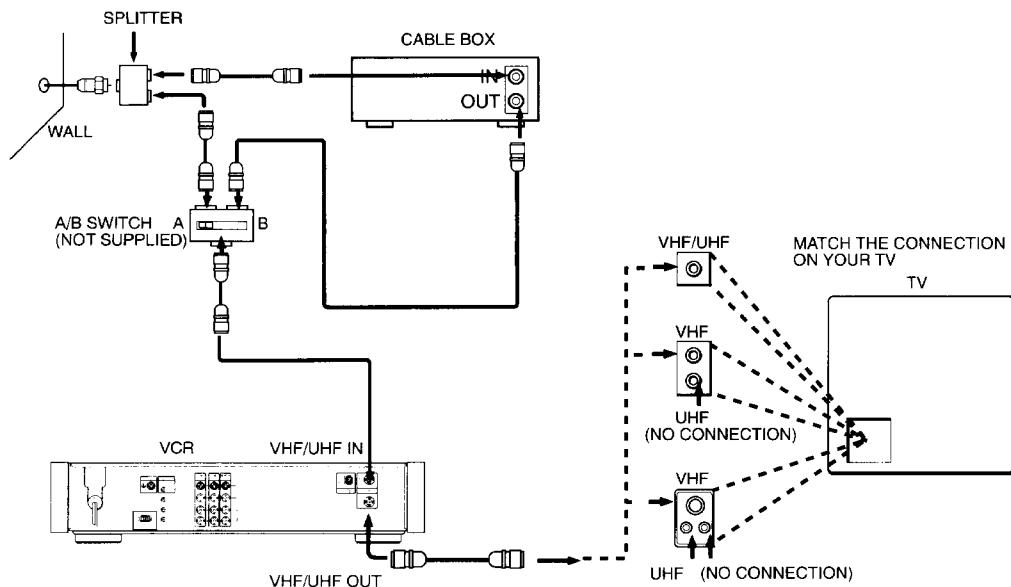
#### Recommended Use:

By using the A/B switch, this hookup allows you to record most channels directly from the VCR (position "A"). You only use position "B" and the cable box if you want to record a "scrambled" channel. This gives you the most convenient operation of the VCR.

#### Background

This VCR can record virtually any unscrambled cable channel. Some cable systems "scramble" specific channels, usually premium or pay-per-view channels. This hookup will allow you to record unscrambled channels by selecting "A" on the A/B switch, and tuning the channel directly on your VCR. To record "scrambled" channels, select "B" on the A/B switch, and select the channel using the cable box. If your cable system scrambles all or most channels, you must use the alternate cable hookup (**Hookup 4**) on page 18.

- Only one cable is supplied with your VCR. Prepare additional cables for connection.



#### What You Can and Can't Do With This Hookup

##### What You Can Do

- Record unscrambled channels directly with the A/B switch in the "A" position.
- Record scrambled channels through the cable box with the A/B switch in the "B" position.

##### What You Can't Do

- Record scrambled channels directly without the cable box.
- Watch a different channel while you are recording a scrambled channel.
- Record scrambled channels through the cable box with the A/B switch in the "A" position.

## VCR Setup (Advanced Cable)

### 1 Set the RF UNIT on the VCR's rear panel to 3CH or 4CH.

If you made A/V connections, skip this adjustment.



Set to whichever channel is not used in your area.  
If both are used, pick either channel.

Details are on page 80.

### 2 Set the A/B switch to "A".

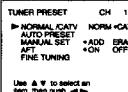
### 3 Set NORMAL/CATV to CATV.

Press MENU.

Select TUNER PRESET.



Set to CATV.



Details are on page 25.

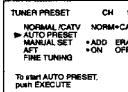
### 4 Preprogram the channels into the VCR.

Press MENU.

Select TUNER PRESET.



Select AUTO PRESSET,  
then press EXECUTE.

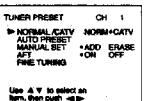
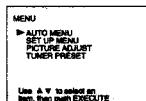


Details are on page 25.

### 5 Add the cable box output channel (usually 2, 3, or 4).

Press MENU.

Select TUNER PRESET.



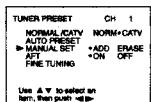
Use A/V to select an item, then push EXECUTE

Use A/V to select an item, then push EXECUTE



Select MANUAL SET.

Add the cable box output  
channel (usually 2, 3 or 4).  
For example, press 3 and  
ENTER, set to ADD, then  
press EXECUTE.



Use A/V to select an item, then push EXECUTE

Details are on page 26.

## Clock Setting

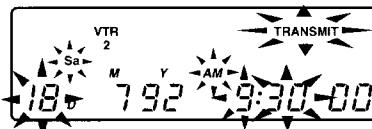
### 1 Open the cover of the Remote Commander.



### 2 Press CLOCK SET.

### 3 Press DAY to set the date, month and year.

### 4 Press H (hour) and M (minute) under the TURN OFF section to set the hour and minute.



### 5 Transmit the setting to the VCR with TRANSMIT, and close the cover.

Details are on page 24.

---

## To Watch TV

- 1 Turn your VCR off, or press the VCR's TV/VTR button until the VTR indicator in the display window goes off.
- 2 Set the A/B switch to "B".
- 3 Switch on your cable box.
- 4 Tune the TV to the cable box output channel (usually 2, 3, or 4).
- 5 Select the channel you want to watch with your cable box.
- 6 After watching the TV, please remember to return the A/B switch and cable box channel to the correct position.

## To Watch the VCR

- 1 Tune the TV to Ch 3 or 4, (or to A/V input if you made A/V connections).
- 2 Insert a cassette and press ▷ PLAY.

Details are on page 31.

## To Record a Program Using the Timer

### ● Unscrambled Channels

- 1 Insert a cassette.
- 2 Switch the A/B switch to "A".
- 3 Open the cover of the Remote Commander.
- 4 Press DAY, TURN ON, TURN OFF and CH to set date, start time, end time and channel number.
- 5 Transmit your programmed timer data with TRANS.
- 6 Leave the A/B switch in "A".

### ● Scrambled Channels

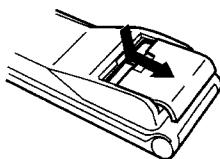
- 1 Insert a cassette.
- 2 Switch the A/B switch to "B".
- 3 Switch on your cable box.
- 4 Select the channel you want to record on the cable box.
- 5 Open the cover of the Remote Commander.
- 6 Press DAY, TURN ON, TURN OFF and CH to set date, start time, end time and channel number. The channel number must be the same as the cable box output channel.
- 7 Transmit your programmed timer data with TRANS.
- 8 Leave the A/B switch in "B".

Details are on pages 37 and 38.

---

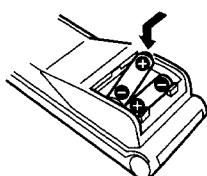
# Preparing the Remote Commander

1



## Inserting Batteries

2



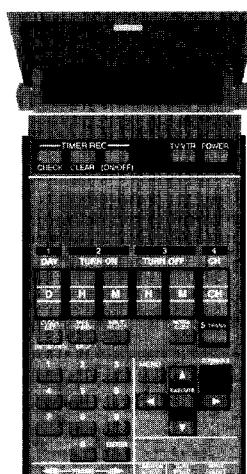
1 Open the lid.

2 Insert two size AA (IEC designation R6) batteries with the polarity lined up correctly.

3 Close the lid.

### Notes on the handling of batteries

- With normal use, the batteries should last for approximately six months.
- If you do not use the Remote Commander for an extended period of time, remove the batteries to avoid possible damage from battery leakage.
- Do not use a new battery together with an old one. Do not use different types of batteries.



## Setting the Command Mode

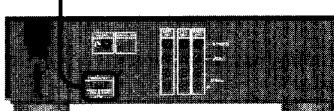
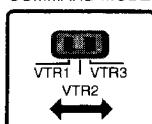
You can select three different positions for the Command Mode setting.

- Set the COMMAND MODE VTR 1/2/3 selector on the rear panel of the VCR to VTR 2.
- Press the COMMAND MODE button on the Remote Commander to display VTR 2 in the LCD panel. When you insert the batteries into the Remote Commander, the indication "VTR 2" appears.



## Controlling Other Sony Video Equipment

COMMAND MODE



- Press the Remote Commander COMMAND MODE button to display VTR 1 or VTR 3, a position other than the one you selected for this VCR.
- Set the COMMAND MODE selector of any other video equipment to the same position you selected in step 1.

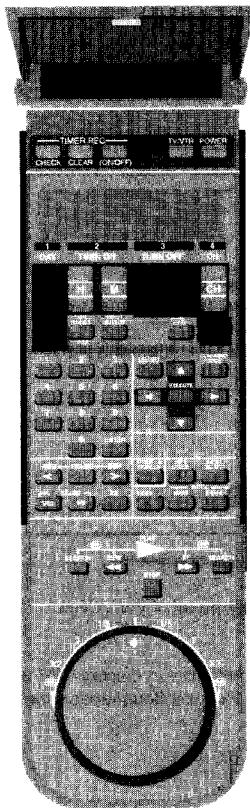
If other Sony video equipment does not have a COMMAND MODE selector, you can control such equipment using the following settings:

Infrared remote controlled Sony Betamax VCRs: VTR 1  
(Some of them may not be controlled in this mode.)  
Sony 8mm format VCRs: VTR 2  
Sony VHS format VCRs: VTR 3

### Note:

When you insert the batteries into the Remote Commander, the indication "VTR 2" appears in the LCD panel. That tells you that the command mode setting of the Remote Commander is set to "VTR 2".

# Setting the Time and Date



You can set the time and date between years 1992 and 2007.  
After setting the year, month, date and time, transmit them to the VCR.

## Before you begin

- Use the + side of the clock set buttons to increase the digit.
- Use the - side of the clock set buttons to decrease the digit.
- You do not have to set the day of the week.  
The day of the week is automatically set after the date is set.

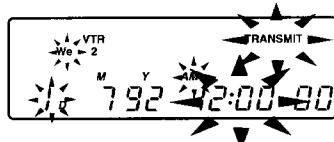
## Example of Time and Date Setting

**Example:** To set to 9:30 am, July 4, 1992

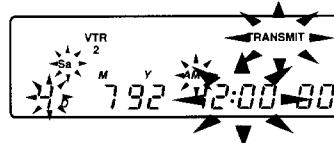
**1** Open the cover of the Remote Commander.

**2** Press CLOCK SET.

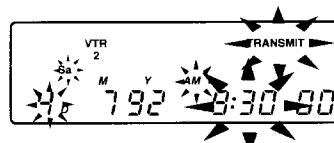
**3** Press D (DAY) until "M7 Y92" appears.  
The day is advanced slowly up to 30 (31) days ahead and then the month is advanced.  
When the number of your desired month appears, release your finger from the button.



**4** Press D (DAY) until "4D" appears.  
The day of the week is set automatically.



**5** Press the H (hour) and M (minute) buttons under the TURN OFF section to set 9:30 A.M.



**6** Point the Remote Commander at the VCR and press TRANS.  
A beep sound confirms that the date and clock setting has been correctly transmitted to the VCR and stored in the VCR as well.  
The clock on the VCR will start counting.

**7** Check the display window on the VCR and close the cover.

If “- : - -” lights up in the display window of the VCR

If the power is interrupted for more than one hour, “- : - -” lights up in the display when the power is restored. You will have to reset the date and clock again.

If a short beep sounds repeatedly

The VCR is in timer recording or quick-timer recording mode and the setting cannot be transmitted.

If the batteries are replaced

Reset the clock correctly.

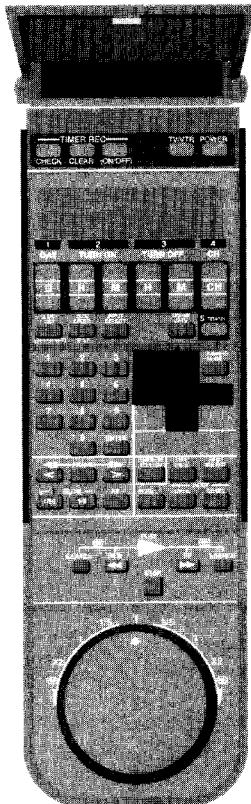
If the clock on the Remote Commander is correct but the VCR's clock is incorrect

● Open the cover of the Remote Commander and press CLOCK SET.

● Point the Remote Commander to the VCR and press TRANS.

The present time is correctly transmitted in hours, minutes and seconds.

## Presetting the Active Channels



This VCR can receive VHF channels 2 to 13, UHF channels 14 to 69 and CATV channels 1 to 125. These channels can be preset using the Remote Commander and the TUNER PRESET display. First, we recommend that you preset the active channels in your area using the automatic preset mode. Then, if there are any unwanted channels, disable them manually. If you have already decided which channels you wish to preset on the VCR, set them directly using the channel number buttons.

## ***Before you begin***

Before presetting channels, check the following points:

- Turn on the VCR and the TV.
  - If you have connected the TV and the VCR using the VHF/UHF OUT on the VCR only, make sure that the TV is set to the correct channel (Ch 3 or Ch 4) for the VCR.
  - Press **TV/VTR** to display the VTR indicator in the display window on the VCR.
  - Press **INPUT SELECT** so that the TUNER indicator and the channel number appear in the display window on the VCR.
  - Use **▲** and **▼** to move the cursor (**►**).
  - Use **◀** and **►** to select the items.
  - To quit setting in the middle of the procedures, press **MENU**.

## **Presetting All Receivable Channels Automatically**

- 1** Press MENU.  
The main MENU appears.

The main MENS appears.

- 2** Press ▲ or ▼ to move the cursor (►) to TUNER PRESET

- 3** Press EXECUTE.

The TUNER PRESET menu is displayed.

- 4** Press ▲ or ▼ to move the cursor to NORMAL/CATV.

- 5** Press **◀** or **▶** to select NORM or CATV.

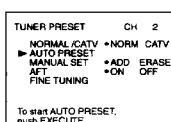
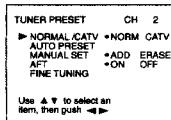
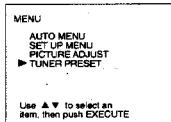
NORM presets the VHF and UHF channels; CATV presets your cable TV channels. The lowest channel number 2 for NORM, and 1 for CATV, will appear on the screen.

- 6** Press **▲** or **▼** to move the cursor to AUTO PRESET.

- 7 Press EXECUTE

Receivable channels are preset in numerical sequence

When no more channels can be found, the presetting stops and the picture of the lowest numbered channel is displayed on the TV screen.



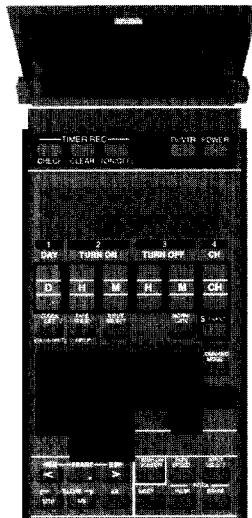


## Presetting Desired Channels or Disabling Unwanted Channels

After automatic presetting is completed, you can disable and/or add channels.

### Before you begin

- Use ▲ and ▼ to move the cursor (►).
- Use ◀ and ► to select the items.
- To quit setting in the middle of procedures, press MENU.



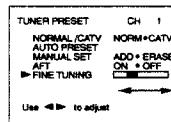
- 1 Follow steps 1 through 3 in "Presetting All Receivable Channels Automatically" on page 25.
- 2 Press CHANNEL +/- on the VCR, or press channel number buttons (0 through 9) on the Remote Commander and ENTER to select the channel.
- 3 To disable channels, press ◀ or ► to select ERASE. To add channels, press ◀ or ► to select ADD.
- 4 Press EXECUTE.

When you press CHANNEL +/-, the disabled channels are removed and the added channels are displayed.

### Fine-Tuning

Normally, the Auto Fine Tuning (AFT) setting on the TUNER PRESET menu is set to ON, and the AFT function fine-tunes the picture. If the picture of a channel is not acceptable, fine-tune it manually.

- 1 Follow steps 1 through 3 in "Presetting All Receivable Channels Automatically" on page 25.
- 2 Press ▲ or ▼ to move the cursor to FINE TUNING. The fine tuning indicator is displayed.
- 3 Press ◀ or ► to get a clearer picture. The AFT ON/OFF automatically switches to OFF.
- 4 If you cannot get a better picture, press ▲ to move the cursor to AFT and select ON. Then, press EXECUTE.



#### The FINE TUNING indicator

The FINE TUNING indicator shows the operable fine-tuning range and stops at the optimal point of reception. When the VCR's tuner is receiving an optimal broadcast signal, the indicator stops at the center position or one space right or left of the center position. However, even when a broadcast is received in an optimal condition, the indicator may not be at the position described.

## Cable TV Channel Assignment

Cable TV systems use letters or numerals to designate the channels. To tune-in a CATV channel, refer to the chart below which shows the CATV channel, numbers on this VCR and the corresponding CATV channel. Note that the channel number assignment shown in the chart may not correspond to the channel number used by your local cable company. Check with your local cable TV company for more information on the available channels.

Number on this VCR	1	2	...	13	14	15	16	17	18
Corresponding CATV channel	A-8	2	...	13	A	B	C	D	E
19	20	21	22	23	24	25	26	27	28
F	G	H	I	J	K	L	M	N	O
29	30	31							
32	33	34	35	36	37	...	94	95	96
S	T	U	V	W	W <sub>+1</sub>	...	W <sub>+58</sub>	A-5	A-4
97	98	99							
A-3	A-2	A-1							
100	...	125							
W <sub>-59</sub>	...	W <sub>+84</sub>							

The VCR is designed to correspond to the standard cable system. However, cable TV services may vary from area to area. Your local cable TV company may adopt either the HRC\*<sup>1</sup> or IRC\*<sup>2</sup> cable system. Even in these cases, this VCR can receive either of these cable systems in the best condition.

### \*1 HRC (Harmonic Related Carriers)

All channels except for 5 and 6 are 1250 KHz lower than the standard cable system. Channels 5 and 6 are 750 KHz higher than the standard cable system.

#### Notes

Pay cable TV systems use scrambled or encoded signals and require special converters (decoders) in addition to the normal cable connection.

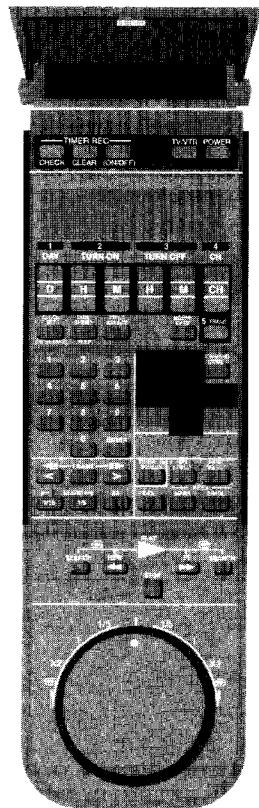
### \*2 IRC (Incremental Related Carriers)

All channels except for 5 and 6 are the same as the standard cable system. Channels 5 and 6 are 2000 KHz higher than the standard cable system.

### FINE TUNING indicator for receiving HRC or IRC cable systems

Even when the signals are received in optimal condition, the FINE TUNING indicator will not stay at the center position for channels higher or lower than the standard cable system due to the difference in the frequency.

# Using the SET UP MENU



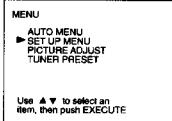
Before using the VCR, set options in the SET UP MENU display to your preferred position.

## Before you begin

- Use ▲ and ▼ to move the cursor (►).
- Use ◀ and ► to select the items.
- To quit setting in the middle of the procedures, press MENU.

**1** Press MENU.

The main MENU appears.



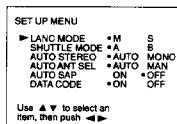
**2** Press ▲ or ▼ to move the cursor (►) to SET UP MENU.

**3** Press EXECUTE.

The SET UP MENU appears.

**4** Press ▲ or ▼ to move the cursor (►) to the menu choice you want (see "Menu Choices" below).

Next, press ◀ or ► to move the dot (\*) to select your desired mode setting.



**5** Press EXECUTE to return to the original screen.

The settings are stored unless the power plug is disconnected.

## Menu Choices

### LANC MODE

If you control another VCR using the synchronized editing function of this VCR, set to M.

Set to S in a case except above-mentioned. (For details, see page 70.)

### SHUTTLE MODE

- When you perform synchronized editing on a playback VCR without the reverse slow playback function, such as CCD-TR series and EV-S550, set to A.
- When you perform synchronized editing on a playback VCR with the reverse slow playback function such as CCD-V701/V801 and EV-S900, set to B.  
(For details, see page 70.)

### AUTO STEREO

If a stereo program's reception is poor, set to MONO. The program is recorded in monaural but the sound quality may improve. (For details, see page 36.)



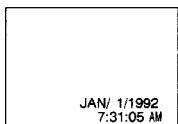
#### **AUTO ANT SEL (Automatic Antenna Selector)**

- If your TV is connected only to VHF/UHF OUT on the VCR inputs, set to AUTO. When playing back a cassette, the picture is automatically displayed on the screen simply by selecting the channel for the VCR on the TV. To watch TV programs selected on the TV, press TV/VTR to turn off the VTR indicator in the display window.
- If your TV is connected to both VHF/UHF OUT and MONITOR OUT on the VCR, set to MAN.

When playing back a cassette, select the input for the VCR on the TV.  
To watch the TV programs selected on the TV, select the tuner input.

#### **What is the data code?**

The data code is information of the record year, month, date and time (hour/minutes/seconds) registered on the tape during recording. It may be registered on an 8mm video camera such as CCD-V801. When a tape of this kind is played back on this VCR with the DATA CODE option set to ON, information is displayed on the TV screen as follows. However, information may not be displayed correctly in variable speed playback mode such as play pause.



#### **AUTO SAP**

When you want to record a SAP sound on the standard track, select ON. Every time there is a SAP (Second Audio Program) broadcast, SAP sound is recorded.

When you do not want to record a SAP sound during receiving a SAP broadcast, select OFF. For details, see page 36.

#### **DATA CODE**

If you want to display data code (date/time) information on the TV screen when you play back a tape recorded on a VCR which can register data codes, select ON.

If you do not want to display them, select OFF.

# Playback

This section shows you how to play back a video cassette.



## Inserting a Video Cassette

### Caution

Be careful not to allow children to stick their fingers into the cassette loading slot. This may cause injury.

1 Insert a video cassette.

2 Gently press the center of the front side of the cassette until the mechanism draws it into the compartment.

When the cassette has been inserted, the cassette indicator lights in the display window and the VCR turns on automatically.

## Ejecting the Cassette

Press EJECT on the VCR. You can eject the cassette when the power is off. When you press EJECT, the power is turned on. After ejecting the cassette, the power automatically shuts off.

### Note

You cannot eject a cassette during recording or recording pause mode.

## Cassette Care

### Notes

- Always insert the cassette in the correct position.
- Never insert anything in the small holes on the rear of the cassette.
- Store cassettes in their cases and keep them in an upright position to prevent intrusion of dust and uneven winding.
- To record from the beginning of the tape, run the VCR for about 15 seconds at the beginning of a cassette before recording.
- When the VCR is not in use, remove the cassette.
- Stick the cassette label in the designated area.
- Securely stick the label not to let it peel off.

### Maximum recording time of a cassette

Cassette used	Recording/Playback Time	
	SP mode	LP mode
P6-15	15min	30min
E6/P6-20	20min	40min
E6/P6-30	30min	1h
P6-45	45min	1h 30min
E6/P6-60	1h	2h
P6-90	1h 30min	3h
E6/P6-120	2h	4h
P6-135	2h 15min	4h 30min
P6-150	2h 30min	5h

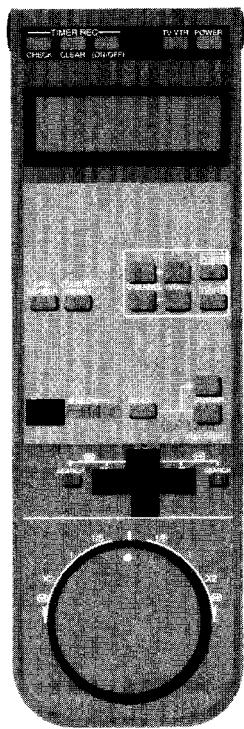
Rear side of a cassette



### Protecting your cassette against accidental erasure

To prevent accidental erasure, slide out the tab on the cassette so that the red color is visible.

**To re-record on the cassette**, slide the tab back.



## Playing Back a Cassette

The VCR automatically detects the type of video system in which the tape was recorded (Hi8 or standard video system, for details see page 54) and plays back the tape accordingly. When a tape recorded in Hi8 video system is played back, the Hi8 indicator on the VCR lights up.

**1 Insert a cassette.**

The VCR turns on automatically.

**2 Turn on the TV.**

If your TV is connected to both the VHF/UHF OUT and MONITOR OUT (or LINE OUT) on the VCR, select the input for the VCR.

If your TV is connected only to the VHF/UHF OUT on the VCR, select the channel for the VCR (Ch 3 or Ch 4).

**3 Press ▷ PLAY.**

**To stop playback**

Press ■ STOP.

**To stop playback for a moment**

Press II PAUSE.

Press II PAUSE again or press ▷ PLAY to resume playback.

**To advance the tape rapidly**

Press ■ STOP, then ►► FF.

**To rewind the tape**

Press ■ STOP, then ◀◀ REW.

**To view the picture during fast forward mode or rewind mode**

You can view the picture momentarily while the VCR is in the fast forward or rewind mode.

Keep pressing ►► during fast forward, and keep pressing ◀◀ during rewind. Release the button to return to fast forward or rewind.

**To eject the cassette**

Press ▲ EJECT on the VCR.

Pressing ▲ EJECT when the VCR is turned off will turn the unit on, eject the cassette and then turn it off again.

**When the tape reaches the end during playback**

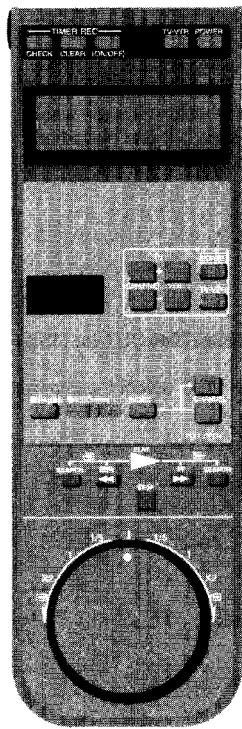
The VCR automatically rewinds the tape to the beginning and the power remains on.

**To turn the VCR on or off**

Press POWER.

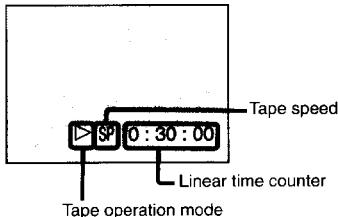
**Never unplug the power cord while a tape is moving**

This may cause the tape to be jammed in the VCR. When you need to unplug the power cord, be sure to remove the cassette or turn off the power of the VCR.



## The Data Screen

To turn off or display the data screen on the TV screen, press DATA SCREEN on the Remote Commander.



### When the data screen does not appear on the TV screen

Check to see that the MONITOR OUT jacks are connected to the line input jacks of the TV. If you connect your TV to the LINE OUT jacks, the DATA SCREEN doesn't appear.

## Indexing Tape Contents

Before recording or playback, press COUNTER RESET on the VCR to reset the counter to zero. This counter is a "linear time counter," which tells you how much the tape has run in terms of time. By noting the setting, you can find that point later by referring to the counter. Use the label on a cassette to list the programs and their counter readings. Since the counter is not so accurate, use it only for reference.

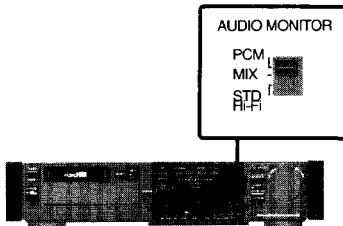
## Playing Back Externally Recorded Tapes

### Notes on counter reading

- The counter does not work on the portions on which no recording has been made.
- After a cassette is ejected, the counter reading is retained. When a cassette is inserted in the VCR, the counter reading automatically returns to "0H00M00S".

When playing back a cassette recorded on another VCR, the tracking condition is automatically adjusted. You can also adjust the sharpness using the PICTURE ADJUST menu (for details, refer to "Adjusting the Picture Quality" on page 53).

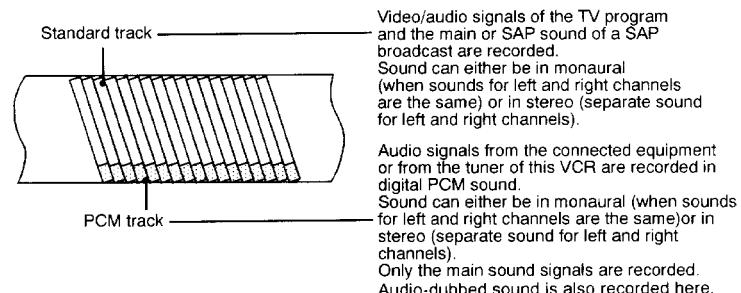
## Selecting the Monitor Sound



You can select the sound you want to hear with the AUDIO MONITOR selector when you play back the following cassettes:

- when second audio program (SAP) is recorded
- when audio/narration is added (audio dubbed cassettes)

The sound you want to hear is recorded on the standard track or on the PCM track on a tape (See the diagram below). To select the sound, change the position of the AUDIO MONITOR selector on the VCR.



### When no sound is heard during playback or the PCM indicator blinks

When a tape which has been recorded on a video camera recorder or a VCR without the PCM function is played back on this unit, the sound may not be heard or be heard only intermittently.

In such a case, select STD on the AUDIO MONITOR selector. The PCM indicator may continue to blink but the sound is heard normally.

### When a TV without VIDEO/AUDIO input is connected

To monitor the playback sound in stereo mode, connect a stereo system additionally.

### When no recording is made on the PCM track

If you select PCM or MIX position, the sound recorded on the standard track is heard.

### When a cassette is recorded on VCR without PCM function

If you select the PCM position, the sound recorded on the standard track is heard.

### When second audio program (SAP) is recorded:

To monitor	Position of the AUDIO MONITOR selector	Track to be played back
SAP* sound	STD	Standard
Main sound	PCM	PCM
both	MIX	Standard/PCM

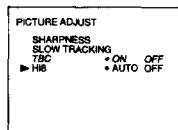
\* SAP sound is recorded in monaural. For recording SAP sound, see page 36.

### When audio/narration is added (audio dubbed cassettes):

To monitor	Position of the AUDIO MONITOR selector	Track to be played back
Dubbed sound	PCM	PCM
Original sound	STD	Standard
both	MIX	Standard/PCM

# Recording

You can record in the Hi8 video system or the standard 8mm video system. The VCR detects the type of video tape (Hi8 video tape or standard 8mm video tape) on which you want to record, and the VCR starts recording accordingly. So, normally set the Hi8 setting on PICTURE ADJUST menu to AUTO. However, if you intend to play back on another standard 8mm video recorder, set the Hi8 setting to OFF on the PICTURE ADJUST menu (for details, see "Selecting Recording System" on page 54).



## Type of video tape and video system in which a tape is recorded

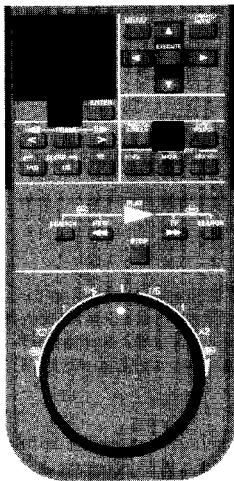
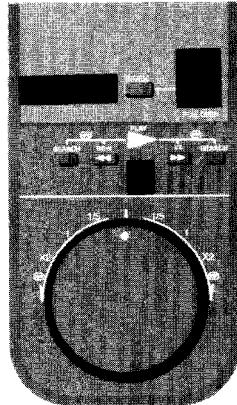
Video tape used	Hi8 setting on PICTURE ADJUST menu	Video system
Hi8 video tape	AUTO	Hi8 video system
	OFF	Standard 8mm system
Standard 8mm video tape	AUTO	Standard 8mm system
	OFF	Standard 8mm system

## *Before you begin*

Before you begin, check the following points:

- Make sure that the connections have been made correctly (see pages 13 - 20.)
- Check the input mode indicator in the display window of the VCR.

## Recording TV Programs



### Notes

#### When the cassette reaches the end

The cassette rewinds to the beginning and the power remains on.

#### If the tape is ejected when the REC buttons are pressed

The tab on the cassette is slid out. Slide the tab in or use a new cassette.

- 1 Insert a cassette.  
The VCR turns on automatically (Auto power on).
- 2 Turn on the TV.
- 3 If your TV is connected to both VHF/UHF OUT and MONITOR OUT (or LINE OUT) on the VCR, select the input for the VCR.  
If your TV is connected only to VHF/UHF OUT on the VCR, select the channel for the VCR (Ch 3 or Ch 4).
- 4 If your TV is connected only to VHF/UHF OUT, then press TV/VTR so that the VTR indicator lights up. Skip this step if your VCR is connected to both VHF/UHF and MONITOR OUT (or LINE OUT).
- 5 Press INPUT SELECT to light TUNER in the display window of the VCR. Select the channel to be recorded with CHANNEL +/- or channel number buttons.
- 6 Select SP or LP with TAPE SPEED (SP/LP).  
To select the best recording tape speed, see "Maximum recording time of a cassette" on page 30.
- 7 Press the two ● REC buttons on the Remote Commander at the same time, or the REC button on the VCR.  
The REC recording indicator lights up in the display window of the VCR.

#### To stop recording

Press ■ STOP.

#### To pause recording

Press □ PAUSE. To resume recording, press □ PAUSE. If the recording pause exceeds approximately 7 minutes, the VCR stops.

## Pausing

### Technique 1

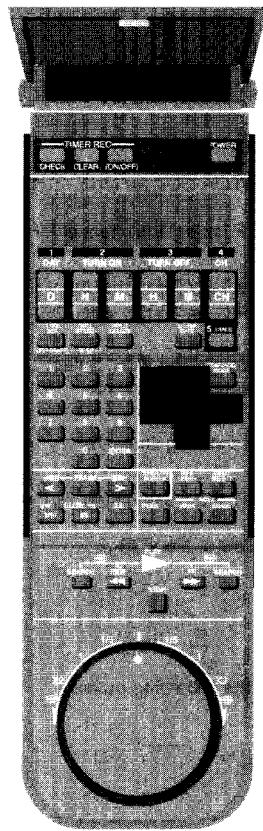
You can stop recording an unwanted scene and resume recording smoothly.

- 1 Press □ PAUSE when an unwanted scene appears.  
Recording will stop and the VCR enters recording pause mode.
- 2 Press □ PAUSE at the desired point to release pause mode.  
Recording resumes from the point set in step 1.

### Technique 2

When an unwanted scene has already started recording, you can rewind the cassette to the desired point, have the VCR standby in recording pause mode, and resume recording when the unwanted scene is over.

- 1 Press □ PAUSE to set the VCR to recording pause mode.
- 2 Turn the EDIT SHUTTLE ring on the VCR to the left to search for the point from which you wish to continue recording.
- 3 Release the EDIT SHUTTLE ring on the VCR at the desired point.  
After an instant in still mode, the VCR automatically enters recording pause mode.
- 4 Press □ PAUSE.  
Recording resumes.



## Recording with the TV Off

Turn off the power of the TV or monitor.  
There will be no interference with the recording.

## Watching One TV Program While Recording Another

- 1 Press TV/VTR so that the VTR indicator goes off.
- 2 Select the channel you want to watch on the TV.

VTR indicator	Picture on the TV screen
Lit	Channel selected by the VCR or the playback picture of the VCR
Unlit	Channel selected by the TV

## Recording Multi-channel TV Sound Broadcasts

### To record a stereo broadcast:

When a stereo broadcast program is received, the STEREO indicator appears in the display window of the VCR. The stereo program is automatically recorded in stereo. If the reception of a stereo program is poor, set AUTO STEREO to MONO on the SET UP MENU. (See page 28.) The sound is heard in monaural but the noise is reduced.

### To record SAP (Second Audio Program) broadcast:

Normally, set AUTO SAP to ON in the SET UP MENU. SAP sound is recorded on the standard track in monaural if there is a SAP broadcast. When the VCR receives a SAP broadcast, the SAP indicator lights up in the display window of the VCR.

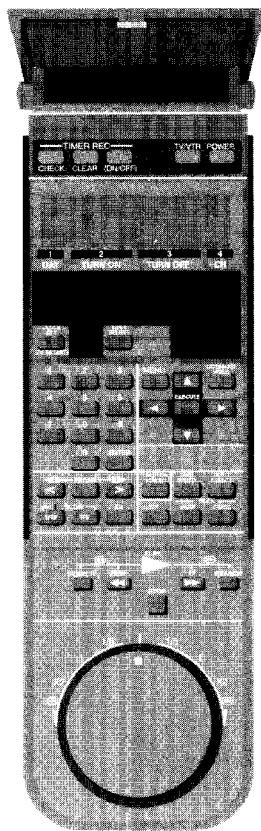
When you do not want to record a SAP sound while receiving a SAP broadcast, select OFF of the AUTO SAP setting in the SET UP MENU. Only the main sound is recorded on the standard track.

To monitor the SAP sound during recording, set the AUDIO MONITOR selector to STD.

### Note

When the TV is connected only to the VHF/UHF OUT on the VCR, you cannot hear the program in stereo.

# Timer-Activated Recording



The timer recording function lets you preset your VCR to record up to six programs within a one-month period. Perform this procedure using the Remote Commander and transmit the preset data to the VCR.

## Before you begin

- Make sure that the time and date clock is set correctly (see "Setting the Time and Date" on page 24.)
- Make sure that the cassette is long enough to record all the programs.
- Make sure that the safety tab of the cassette has not been slid out. If you insert a cassette with the safety tab visible in red (closed) and try to set the timer, the cassette automatically ejects from the VCR.

## Setting the Timer

### Example:

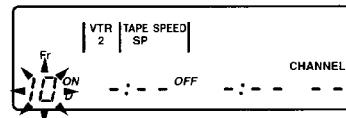
Record a program broadcast on channel 26 from 9:00 pm to 10:55 pm on Friday, July 10 in LP mode.

- 1 Open the cover of the Remote Commander.  
The Remote Commander enters timer preset mode.

#### Note:

Never close the cover until you finish transmitting the program data to the VCR.

- 2 Press D (DAY) until 10 appears.  
The day of the week (Friday) is automatically set.
- 3 Press H under the TURN ON section until 9 PM appears.
- 4 Press M under the TURN ON section until 00 appears.
- 5 Press H and M under the TURN OFF section until 10 PM 55 appears.



### Note

The tape counter will return to "0H00M00S" when the timer recording starts. (If you have multiple timer settings, the counter will reset to "0H00M00S" when the first program starts.)

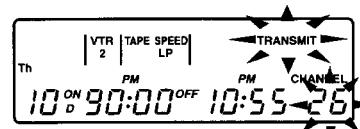
(Continued)

- 6** Set the recording speed, SP or LP, with TAPE SPEED (SP/LP).



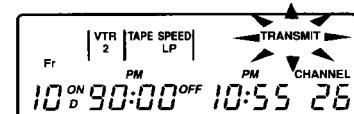
- 7** Press CH (CHANNEL) until 26 appears.  
(If you wish to record a cable TV program, display CATV in the LCD panel with NORM/CATV, then select the desired channel.)

The "TRANSMIT" indicator blinks to indicate that all of the items are entered.



- 8** Point the Remote Commander to the VCR and press TRANS. Press TRANS within five minutes after you have entered all the items.

A beep sound will tell you that the preset data have been transmitted to the VCR, and the VCR enters recording standby mode. The TIMER REC indicator lights up in the display window of the VCR.



**To set another program,** repeat steps 2 to 8.

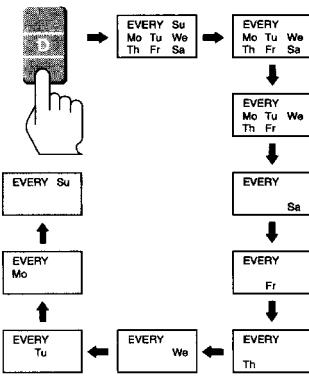
- 9** Close the cover of the Remote Commander so that the present time appears on the LCD panel.  
The VCR turns on automatically and starts recording at the preset time, then turns off after the recording ends.

#### **To stop timer-recording**

To stop timer-recording while a program is being recorded, press TIMER REC (ON/OFF).

#### **To record video sources from LINE IN 1 or 2 jacks**

Press INPUT SELECT in step 7 to change the input indication in the LCD panel from CHANNEL to L1 or L2. Select LINE 1 or LINE 2 according to the input jack used.



## Daily/Weekly Recording

You can preset your VCR for daily or weekly recording.

Daily recording records the same program every day of the week. Weekly recording records the same program on the same day, every week.

In step 2 of the "Setting the Timer" section (page 37), press the – side of the D button to change the indication on the LCD panel to one of the choices. (See the diagram at left.) When you set and transmit your preset data to the VCR, the corresponding indicator lights in the display window of the VCR.

**If power interruption occurs during timer recording,** recording will stop and your VCR will turn off. If power is restored within one hour, and it's before the recording end time, recording will start again from that point. If the interruption lasts for more than one hour, any presettings will be erased and you'll need to reset the time and date for your programs. Note that the tape counter will return to "0H00M00S."

## Timer Recording Standby Mode

When you return the VCR to timer recording standby mode, you can record any previously preset programs. The VCR turns on automatically to record the first preset program. When it finishes recording, the power automatically shuts off. To stop recording while a program is being recorded, press TIMER REC (ON/OFF).

## Buttons Operable During Timer Recording

TIMER REC (ON/OFF)	To stop recording.
COUNTER RESET	(See "Indexing Tape Contents" on page 32.)
TV/VTR	(See "Watching One TV Program while Recording Another" on page 36.)
DATA SCREEN	(See "The Data Screen" on page 32.)
TIMER REC CHECK	(See "Changing or Cancelling the Timer Settings" on page 42.)
TIMER ON SCREEN	(See "Checking the Timer Settings" on page 41.)

# Overlapping Timer Recordings

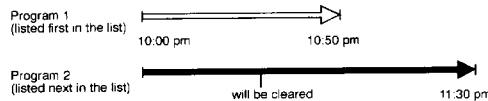
If you've made a "mistake" when presetting multiple programs, the VCR will interpret your settings as described in the following cases.

---

## Case 1

**If you preset two programs to begin recording at the same time...**

The program listed first on the PROGRAM LIST display has priority over the other programs. The timer settings for lower priority programs will be deleted from the PROGRAM LIST display when recording begins for the first program.

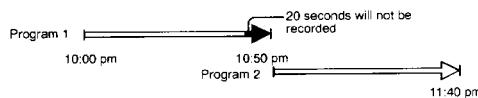


---

## Case 2

**If you set program 2 to begin recording at the exact time you set program 1 to finish recording....**

The last 20 seconds of program 1 will not be recorded.

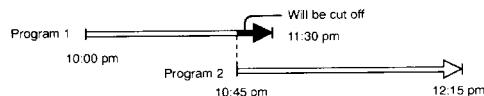


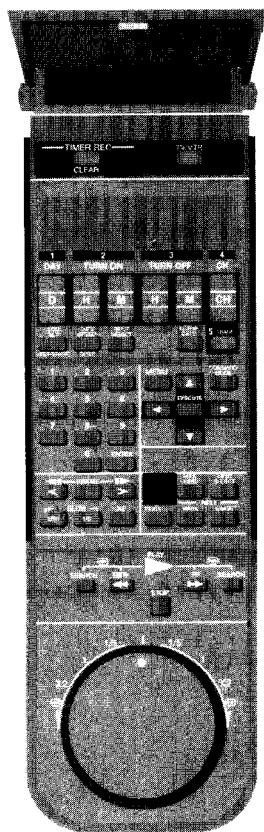
---

## Case 3

**If you set program 2 to begin recording before program 1 has finished recording...**

Program 2 will begin recording before program 1 has finished.





## Checking the Timer Settings

Here's how to display your timer settings to confirm the programs you wish to record.

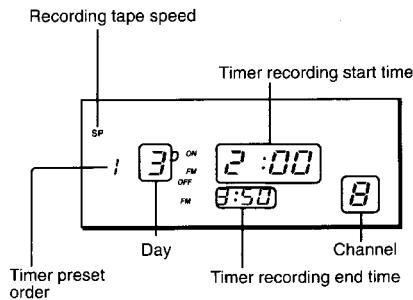
- 1 Press TIMER REC (ON/OFF) to release timer recording standby mode.  
The TIMER REC (recording) indicator turns off in the display window of the VCR.
- 2 Press POWER to turn on the VCR.
- 3 Turn on the TV.  
If your TV is connected to LINE OUT, you cannot display on-screen information.
- 4 Press TIMER ON SCREEN.  
The PROGRAM LIST appears on the TV screen for your checking.
- 5 Press TIMER REC (ON/OFF) to return to timer recording standby mode.  
The TIMER REC (recording) indicator turns on in the display window of the VCR.

PROGRAM LIST		
DATE	CH	SP
7/1 13:00	CH 3	SP
7/1 13:00	CH 5	SP
MON - FRI	CH 11	SP
MON - FRI	CH 15	SP
7/1 10:00	CH 26	SP

### To check the timer setting without using the PROGRAM LIST display

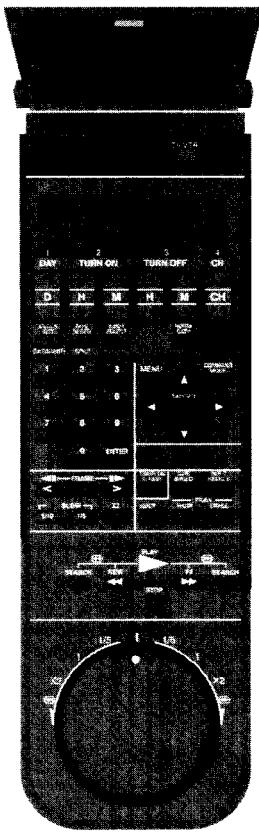
Press TIMER REC CHECK.

Each time the button is pressed, timer preset data will appear in the display window of the VCR in the preset order. You do not have to release timer recording standby mode.



### Notes

- If you set a program to record only one time, that setting is erased from the PROGRAM LIST display when the recording has finished.
- To check the timer settings during timer recording, press TIMER ON SCREEN.



## Changing or Cancelling the Timer Settings

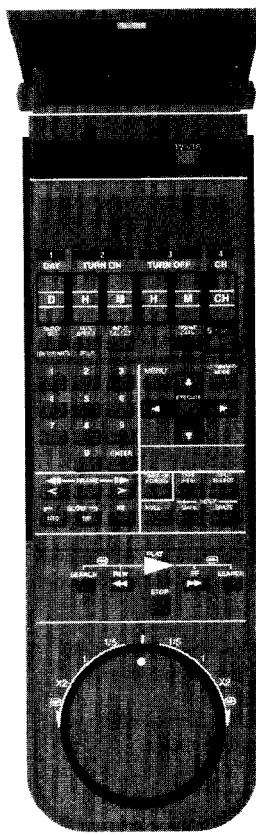
Here's how to change or cancel any timer settings on the PROGRAM LIST display.

- 1 Display the PROGRAM LIST display on the TV screen.  
Follow steps 1 through 4 of the "Checking the Timer Settings" (page 41) section.
- 2 Press TIMER REC CHECK to display the cursor (►).
- 3 Press TIMER REC CHECK to move the cursor (►) to the setting you want to change or cancel.
- 4 **To change the setting,**  
Re-enter all the items and transmit it to the VTR. (See "Setting the Timer" on page 37.) The VCR returns to timer recording standby.

**To cancel the setting,**  
Press TIMER REC CLEAR.

### To change timer settings without using the PROGRAM LIST display

- 1 Press TIMER REC CHECK repeatedly until the program you want to clear appears in the display of the VCR.
- 2 Change the setting and press TRANS to transmit it to the VCR.



**To cancel the timer settings without using the PROGRAM LIST display**  
You can erase the setting you do not want while referring to the display window on the VCR.

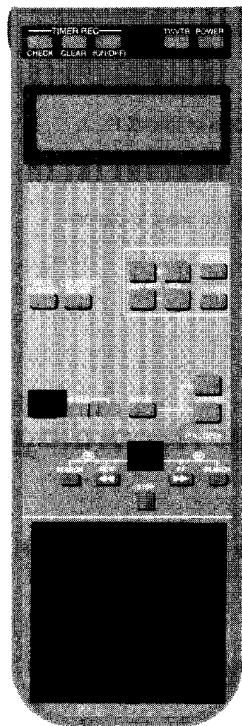
- 1** Press TIMER REC ON/OFF.  
The TIMER REC (recording) turns off in the display window of the VCR.
- 2** Turn on the power of the VCR.
- 3** Press TIMER REC CHECK repeatedly until the program you want to cancel appears in the display window.
- 4** Press TIMER REC CLEAR.  
The timer setting of the selected program is cancelled.

## Using the VCR Before Timer Recording Starts

If you want to use your VCR while it's in timer recording standby mode, you must first turn off the TIMER REC (recording) indicator in the display window of the VCR.

- 1** Press TIMER REC ON/OFF.  
The TIMER REC (recording) in the display window turns off and the VCR leaves the timer recording standby mode.
- 2** Press POWER.  
The VCR is ready to use.
- 3** After using the VCR, press TIMER REC (ON/OFF).  
The VCR returns to the timer recording standby mode.

# Variable Speed Playback



The following section explains the advanced playback functions available on your VCR. No sound is heard during these operations.

## Still Picture

During playback, press **PAUSE** to hold the picture in one place.

To resume normal playback, press either **PLAY** or **PAUSE**.

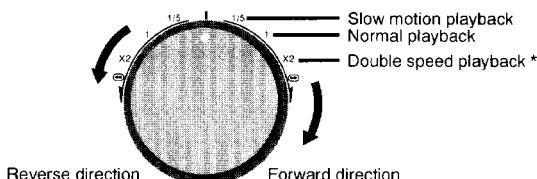
If you leave your VCR in pause mode, normal playback resumes after approximately 7 minutes.

## SHUTTLE Ring Operation

Using the SHUTTLE ring on the Remote Commander during playback or playback pause, you can play back cassettes at a variety of speeds, in the forward direction or reverse direction.

Turn the SHUTTLE ring clockwise to advance the tape in the forward direction. Turn the SHUTTLE ring counterclockwise to advance the tape in the reverse direction.

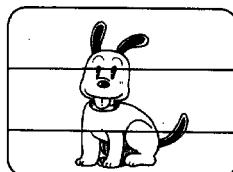
The playback speed depends on how far you turn the SHUTTLE ring. When you release the SHUTTLE ring, the VCR returns to playback pause mode.



\* This operation is also available with the **x2** button on the Remote Commander.

### Note

During variable speed playback, streaks may appear on the picture, the picture may flicker and the color may not be reproduced properly depending on the speed or the direction. This is not a malfunction.

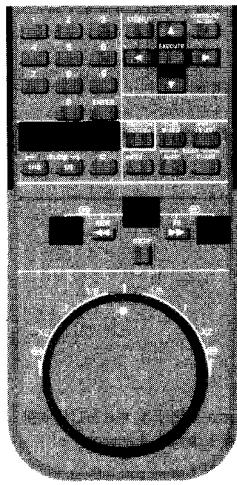


Example: Reverse double speed playback

## Picture Search (During Playback)

Press **FF** or **REW** during playback.

When you release your finger from the button, normal playback will resume.



## Locked Picture Search

This feature works only when using the Remote Commander.

Press SEARCH on the Remote Commander during playback or playback pause. For the reverse direction, press the left SEARCH button. For the forward direction, press the right SEARCH button.

Press ▶ PLAY to return to normal playback.

## Auto Play

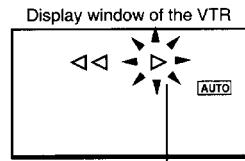
You can start playback automatically after rewinding a cassette.

You cannot use Auto Play with the Remote Commander.

Press ▶ PLAY while holding ◀◀.

Playback starts automatically after the tape is rewound to the beginning.

The "▷" indication blinks while the tape is being rewound.



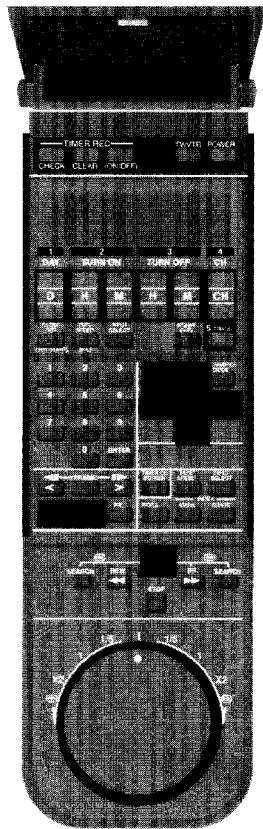
### Note

It takes about two or three seconds to reverse the direction in slow motion playback or frame-by-frame picture.

## Frame-by-Frame Picture

During playback pause, press FRAME to enter still mode, then press > to advance the picture one frame or < to reverse the picture one frame.

Each time you press the button, the picture moves one frame. To resume normal playback, press ▶ PLAY.



## Slow Motion Playback

This feature works only when using the Remote Commander.

Press **► SLOW 1/10** (1/10 of normal speed) or **1/5** (1/5 of normal speed) during playback.

**To play back in slow motion in the reverse direction**  
Press < .

**To resume the forward direction**  
Press > .

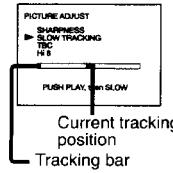
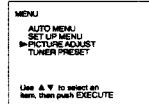
**To return to normal playback**  
Press ► PLAY.

If you leave the VCR in slow motion mode for more than one minute, the VCR will automatically return to normal playback to protect the tape against damage.

**If snow or streaks appear during slow motion playback**  
Adjust the picture on the PICTURE ADJUST menu.

This adjustment works only during slow motion playback.

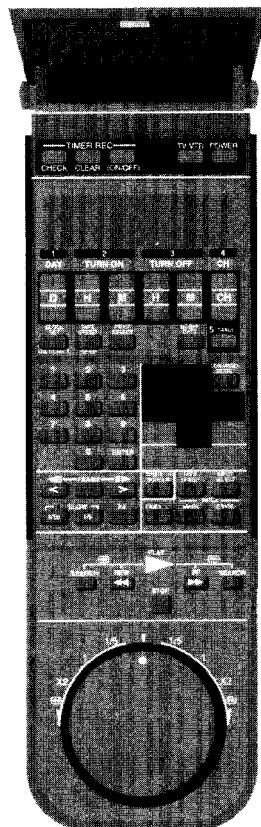
- 1 Press MENU to call up the main MENU.
- 2 Press ▲ or ▼ to move the cursor to PICTURE ADJUST.
- 3 Press EXECUTE.  
The PICTURE ADJUST menu appears.
- 4 Press ▲ or ▼ to move the cursor (►) to SLOW TRACKING.
- 5 Press ◀ or ► to move the ■ mark on the tracking bar so that the picture will be shown on the screen more clearly.
- 6 Press EXECUTE.  
The PICTURE ADJUST menu disappears.



### Notes

- If the tracking bar is shifted too much, noise in the picture becomes too unstable to adjust. In this case, reset the tracking to the center position.
- If you adjust the tracking bar during reverse slow motion playback, the picture may shake or the color may not be reproduced properly or the color may disappear from the screen.

# Assigning a Desired Operation — AUTO MENU



You can get the VCR to perform certain functions in sequence automatically. The AUTO MENU guides you to your desired sequential operations. You can choose from the six AUTO MENU choices.

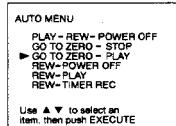
You cannot perform these operations while a cassette is not inserted or when the tape is being transported.

## ***Before you begin***

- Use ▲ and ▼ to move the cursor.
- Use ◀ and ▶ to select items.
- To quit setting in the middle of the procedures, press MENU.

## **AUTO MENU Setting**

- 1 Press MENU.  
The main MENU appears.
- 2 Press ▲ or ▼ to move the cursor (►) to AUTO MENU.
- 3 Press EXECUTE.  
The display changes to "AUTO MENU" display.
- 4 Press ▲ or ▼ to select the desired menu choice.  
For menu choices, see the next page.
- 5 Press EXECUTE to return to the original screen.



## Menu choices

### **PLAY-REW-POWER OFF**

Plays back the tape, rewinds the tape when it reaches the end, and turns the power off.

### **GO TO ZERO-STOP**

Searches for the counter zero point and stops.

### **GO TO ZERO-PLAY**

Searches for the counter zero point and starts playback.

### **REW-POWER OFF**

Rewinds the tape to the beginning and turns off the power.

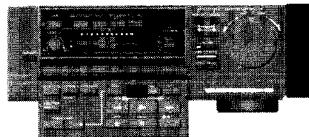
### **REW-PLAY**

Rewinds the tape to the beginning and starts playback.

### **REW-TIMER REC**

Rewinds the tape to the beginning and puts the VCR in timer recording standby mode when the timer is preset.

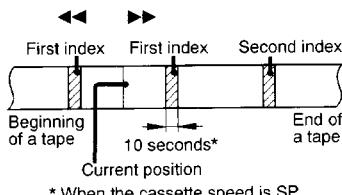
# Index Function



You can find specific locations easily using the markings (index points) recorded on a cassette. This function is called Index Function.

You can mark an index anywhere on a cassette, so that you can easily find the specific point later on. Index works as a divider between scenes, and is not numbered. So, when you specify the index mark later, you have to specify the relative position from the current position. (The first index, the second index...from the current position.)

You can mark and erase index signals during playback, while during recording you cannot erase them.



## Notes

- When marking index signals, leave an interval of at least 2 minutes between them so that the VCR can detect the signals correctly.
- You cannot mark an index signal in the following cases:
  - On a cassette with a safety tab slid out (red mark visible)
  - On an unrecorded portion of a tape
  - Immediately before a point on the cassette where the cassette speed (SP or LP) changes.

## Marking Index Signals

Where you mark an index, the INDEX indicator flashes in the VCR's display window and the INDEX MARK indicator appears on your TV screen.

### Automatic Index Mark

An index signal is automatically recorded at the beginning of a scene when you start recording.

### Manual Index Mark

When recording or playing a cassette, you can manually mark an index signal by pressing INDEX MARK.

A black streak appears at the bottom of the screen.



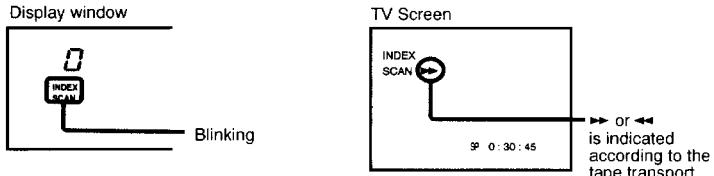
When you mark an index signal during playback, the recorded sound may not be clear or may not be heard.

## Playing Back from the Index Point — Index Scan

Here's how to find and play a program you've marked with an index signal:

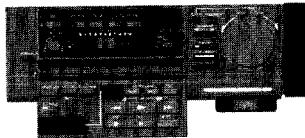


- 1 Insert an indexed cassette into your VCR.
- 2 Press INDEX once.  
The INDEX and SCAN indicators flash alternately in the display window and the INDEX SCAN indicator appears on the TV screen.
- 3 Press **◀◀** to find the previous program or **▶▶** to find the next program.  
The index scan locates the next index signal and plays about 10 seconds of tape prior to the signal. The VCR then rewinds or advances to the next index signal. Every time the VCR finds an index signal, playback begins.



- 4 When you find the program you want, press **▶ PLAY** during 10 second preview. Playback starts from that point.

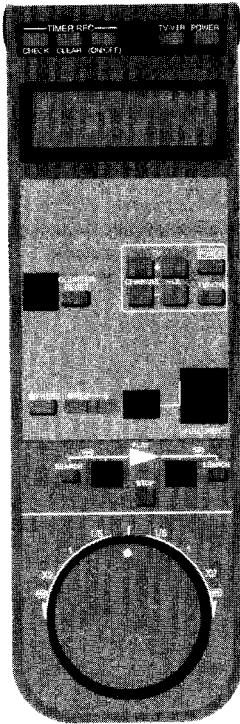
**To stop index scan underway**  
Press **▶ PLAY** or **■ STOP**.



## Locating an index — Index Search

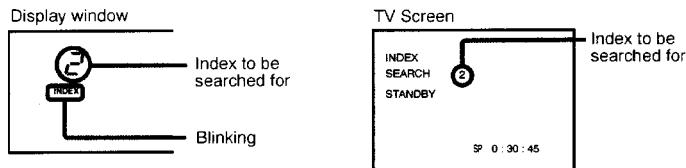
Locate an index by indicating how many index signals ahead or behind that program is from the cassette's current position.  
You can specify index number up to 19.

Here's how:

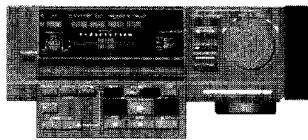


- 1 Press DATA SCREEN to display the data screen.
- 2 Press INDEX twice continuously.
- 3 Press CHANNEL/INDEX +/– to display the desired number.  
If you press INDEX again, you can increase the number.  
For example, the scene you want to view is located 3 scenes ahead the present position, display "INDEX SEARCH 3". If the scene is located three scenes behind the present position, display "INDEX SEARCH 4".

INDEX 4	INDEX 3	INDEX 2	INDEX 1	INDEX 1	INDEX 2	INDEX 3	INDEX 4
Three scenes behind	Two scenes behind	Previous scene	Present position	One scene ahead	Two scenes ahead	Three scenes ahead	



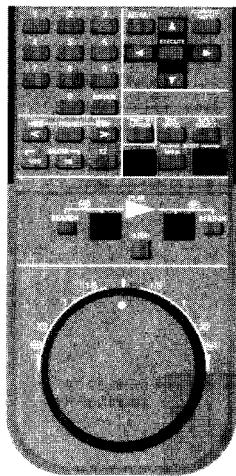
- 4 Press ►► FF to find an upcoming index signal or ◀◀ REW to find a prior index signal.  
The cassette advances or rewinds to find the signal.  
Each time an index signal is detected, the index number increases or decreases.  
When the index number reaches 0, it means you've located the specified scene and your VCR will begin to play.



## Erasing Index Signals

To remove any unwanted index signals, follow these steps:

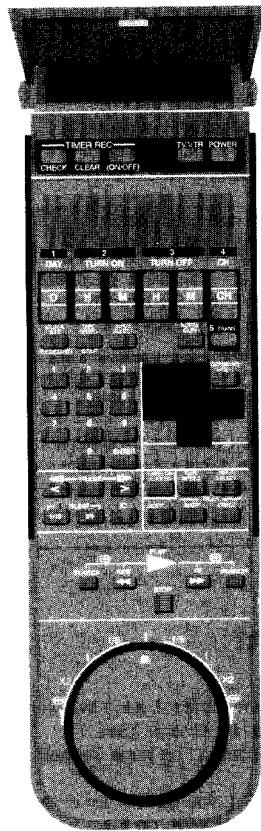
- 1 Press INDEX once during playback or stop mode.  
When the data screen is on the TV screen, "INDEX SCAN STANDBY" appears.
- 2 Press ►► FF to find the next scene or ◀◀ REW to find the previous scene.  
Each time an index is detected, the VCR plays back the indexed scene for approximately 10 seconds. It then rewinds or advances to the next index signal. This 10 second preview lets you decide whether you've located the index mark you want to erase.
- 3 Press INDEX ERASE during 10 second preview.  
"INDEX ERASE" is displayed on the TV screen. The tape automatically rewinds to a position before that index, then the index is erased. During erasing, a black streak appears at the bottom of the screen. After erasing is complete, the next index is located.



### Notes

- At the beginning of the tape, you cannot erase an index signal.
- Index recorded in the prerecorded 8mm cassettes cannot be erased.
- Some index signals marked on other camcorders or VCRs cannot be erased on this unit. Also, it may not be possible to erase index signals marked on this unit on other camcorders or VCRs. It is recommended to erase index signals on the same equipment on which the index signals were marked in order to perform index erasing correctly.

# Adjusting the Picture Quality — Sharpness/TBC/DNR



Your VCR is equipped with the "SHARPNESS", "TBC" and "DNR" adjustment functions which allow you to enjoy a clear, finely picture. This adjustment is only effective during playback.

For picture adjustment during slow motion playback, see page 46.

Selecting recording system (Hi8 video system or standard video system) is also important for high-quality picture. For selecting recording system, see page 54.

Perform the following adjustments according to the picture condition.

- **To make a picture softer or sharper**  
→ Use the SHARPNESS adjustment (see the procedure below)
- **To stabilize the picture**  
→ Set to ON of the TBC option in the PICTURE ADJUST menu
- **To reduce noise in the picture**  
→ Use the DNR (Digital Noise Reduction) adjustment (see page 54.)

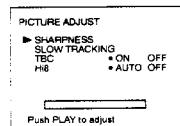
## Before you begin

- Use ▲ and ▼ to move the cursor.
- Use ◀ and ▶ to select items.

## Sharpness Adjustment

### 1 Press MENU.

The main MENU display appears on the TV screen.



### 2 Press ▲ or ▼ to move the cursor (▶) to PICTURE ADJUST.

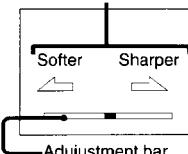
### 3 Press EXECUTE.

The PICTURE ADJUST menu appears on the TV screen.

### 4 Press ▲ or ▼ to select "SHARPNESS".

These indications do not appear on the screen.

### 5 Press ◀ or ▶ to adjust the picture to your preference.



### 6 Press EXECUTE.

The PICTURE ADJUST menu disappears from the TV screen and the original screen returns.

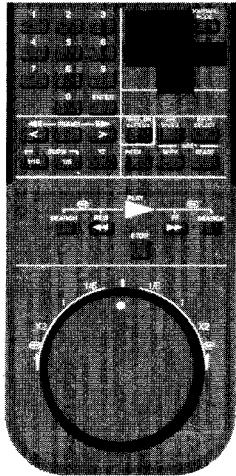
### What is TBC?

Abbreviation of Time Base Corrector. This feature electrically stabilizes the playback signals by removing roll in the playback picture caused by irregularity in drum rotation and tape movement. Time base correction reduces deterioration of picture quality when transmitting or copying playback signals.

### What is DNR?

DNR is the abbreviation of Digital Noise Reduction.

This feature makes prior and successive video signals into a composite signal and reduces noise in the picture using the field memory.



## DNR Adjustment

When a cassette is inserted into the VCR, the VCR starts playback in DNR standard mode and the DNR indicator lights up on the front panel. If a cassette more deteriorated in quality is played back, press DNR on the VCR. Each time the DNR button is pressed, the DNR function works as follows:

DNR level	DNR Indicator on the front panel	Screen display*	When you need this adjustment?
→ Maximum	Illuminated	DNR MAX	When you wish to play back a deteriorated cassette or decrease noise in the picture.
↑ Standard	Illuminated	DNR STD	Normally use this level.
→ Minimum	Not illuminated	—	When you want to obtain a more detail-enhanced picture.

\*The screen display turns off automatically.

## Selecting Recording System

You can record a cassette in either Hi8 video system or 8mm standard video system. You cannot perform Hi8 recording with a cassette other than a Hi8 tape. (See "Type of video tape and video system in which a tape is recorded" on page 34, and "Hi8 (High Eight) Video System" on page 79.)

When the Hi8 indicator lights up on the front panel of the VCR, you can record in the Hi8 video system. If you intend to play back on a standard 8mm VCR, do the following steps to select Hi8 OFF.

- 1 Call up the PICTURE ADJUST menu.  
Follow steps 1 through 3 on page 53.
- 2 Press ▲ or ▼ to move the cursor (►) to Hi8.  
The Hi8 indicator lights up.
- 3 Press ◀ or ► to set the dot (•) to AUTO or OFF.  
AUTO --- The VCR automatically detects the type of cassette to be used (Hi8 video tape or standard video tape) and recording is done accordingly (in the Hi8 video system or 8mm standard video system).  
OFF --- When you intend to play back the Hi8 cassette on a standard 8mm video recorder.
- 4 Press EXECUTE.  
The PICTURE ADJUST menu disappears from the TV screen.

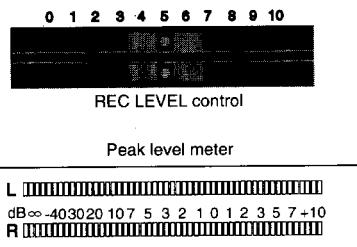
# PCM Audio Recording

You can record PCM audio sound from the built-in tuner or from a connected audio equipment, such as a stereo system.

You can adjust the PCM sound by the REC LEVEL control located inside the front panel flap. Hi-Fi sound is automatically adjusted and does not work together with the REC LEVEL control adjustment.

To record with the built-in tuner, set this control to position 5 (optimum level position).

To record with an external audio equipment, adjust the recording level with the REC LEVEL control. Monitor the sound to be recorded and set the REC LEVEL control to the desired position while observing the peak level meter change in the display window of the VCR.



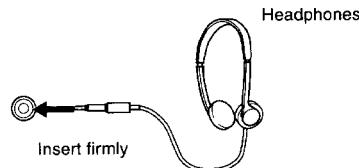
## Appropriate recording level

From records -----the peak level meter lights at +10 when a maximum volume sound is input.

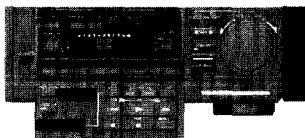
From CDs or DATs -----the peak level occasionally lights at the +10.

## When using a microphone or headphones

- Select the LINE IN 1 or LINE IN 2 input when you use a microphone.
- The microphone input is monaural and mixed with the line input signal.
- Do not use a plug-in power microphone.
- Insert the headphones firmly.



# Quick-Timer Recording



This feature lets you record programs without going through the entire timer setting procedure. Note, however, that it provides only an approximate setting for the program you wish to record.

## ***Before you begin***

- Make sure that the clock has been set correctly.
- Check to see that the TIMER REC indicator is not lit in the display window of the VCR.

## **Operation**

If you're currently recording, skip to step 7.

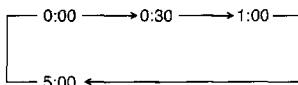
- 1 Insert a cassette into your VCR.
- 2 Press INPUT SELECT to light the TUNER in the display window.
- 3 Select the desired recording speed (SP or LP) by pressing TAPE SPEED inside the front panel.
- 4 Press QUICK TIMER on the VCR.  
If you insert a cassette with the safety tab slid out, your VCR will eject the cassette.
- 5 Select the channel you wish to record using CHANNEL/INDEX +/-.  
The channel can be changed while the channel indicator is blinking (for about 30 seconds).
- 6 Press QUICK TIMER again to start recording.
- 7 Select the recording duration by pressing QUICK TIMER to change the duration indicator in the display window.  
Each time you press QUICK TIMER, the recording duration increases by 30 minutes (up to 5 hours).

- **If your cassette ends during quick-timer recording**

Recording stops and the VCR turns off. The cassette will not rewind automatically.

- **If a power interruption occurs during quick-timer recording**

Recording will stop and your VCR will turn off. If the interruption lasts less than one hour and the power is restored before the recording end time, recording will start again from that point.



Once recording has finished, your VCR will turn off automatically. During quick-timer recording, the recording time can be changed by pressing the QUICK TIMER button. During recording, the time displayed will count down in units of one minute.

### **To stop quick-timer recording:**

To stop quick-timer recording while a program is being recorded, press TIMER REC ON/OFF.

## **Buttons Operable During Quick-Timer Recording**

TIMER REC (ON/OFF)	To stop quick-timer recording.
QUICK TIMER	To change recording duration.
COUNTER RESET	To reset the counter to zero.
INDEX MARK	To record an index signal.
TV/VTR	To watch the picture broadcast on another channel (TV).

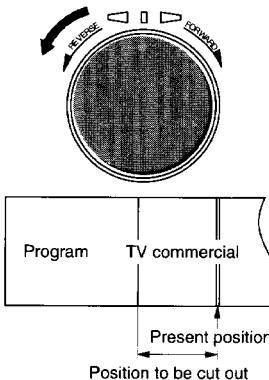
# Cutting out the Unwanted Scenes — SHUTTLE EDIT



## During Recording

If you wish to cut out scenes such as TV commercials, you can pause recording and rewind the tape until the beginning of an unwanted scene is reached. You can then, record over it. This feature is controlled using the EDIT SHUTTLE ring on the VCR. During timer-activated recording, you cannot use this function.

- 1 Press **II PAUSE** during recording.  
The VCR enters recording pause mode.
- 2 Turn the EDIT SHUTTLE ring on the VCR counterclockwise to rewind the tape until the unwanted scene appears.



Turn the ring slightly. During rewinding, the screen changes to the playback picture, but sound is not switched. When you release the ring, the VCR enters playback pause mode.

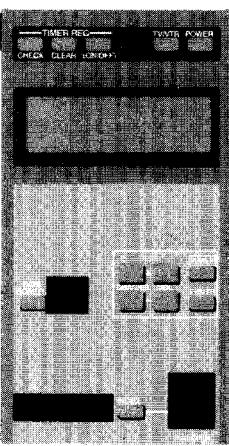
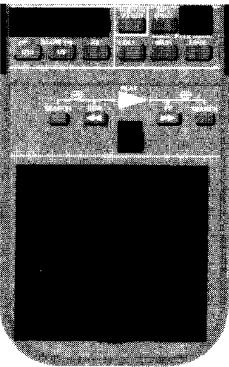
For searching for more specific points, press **◀ II FRAME** or **FRAME II ▶** within 3 seconds after you released the ring. (After 3 seconds, the VCR returns to recording pause mode.)

- 3 Press **II PAUSE** when an unwanted scene appears on the screen.  
Recording starts.



## During Playback

You can re-record onto an unwanted portion of a pre-recorded cassette. Use the EDIT SHUTTLE ring on the VCR or the SHUTTLE ring on the Remote Commander.

- 1 Press **II PAUSE** at the end of the unwanted scene during playback.  
The VCR enters playback pause mode.
  - 2 Press COUNTER RESET to set the linear counter to "0H00M00S".
  - 3 Turn the ring until the beginning of the unwanted scene appears on the screen.  
When you release the ring, the VCR enters playback pause mode. Use **◀ II FRAME II ▶** to rewind or advance the picture frame by frame for searching more specific points.
  - 4 Press **● REC**.  
The VCR enters recording pause mode.
  - 5 Select a new program for re-recording.  
Select the channel or change the input by pressing CHANNEL/INDEX +/- or INPUT SELECT.
  - 6 Press **II PAUSE** when the scene to be recorded begins to appear on the screen.  
Recording begins.
  - 7 Press ~~■ STOP~~ when the linear counter shows "0H00M00S".  
*Will stop*
- 
- 

### Note

The picture may be distorted a moment at the cut-out point (recording end point).

# Overview of the Editing Functions

Using a second VCR, you can record programs from one VCR to the other. The followings are the tape editing functions available on the VCR.

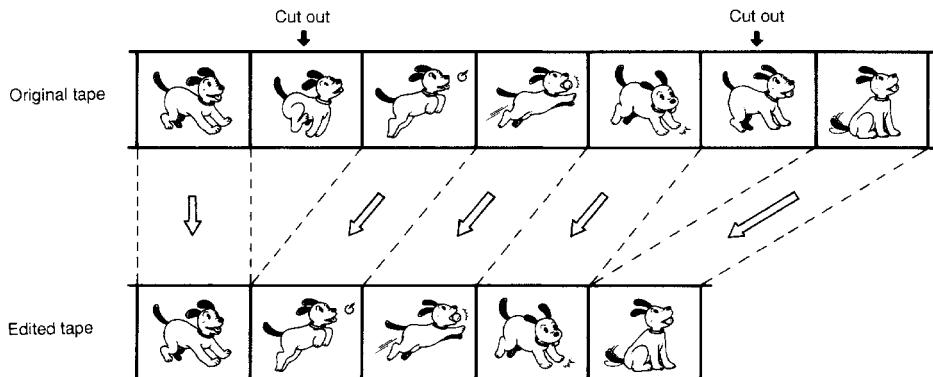
- **To make a copy of a tape**

→ See "Tape Dubbing" on page 61.



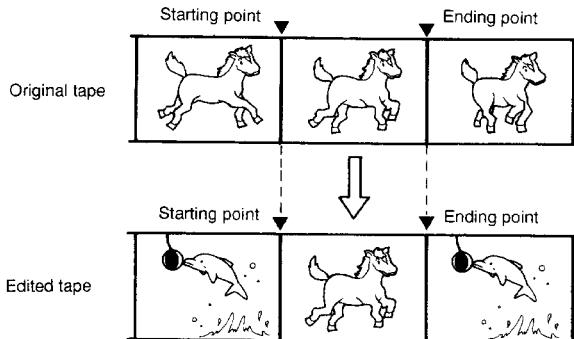
- **To edit out unwanted scenes**

→ See "Assemble Editing" on page 64.



- **To insert another scene into a tape**

→ See "Insert Editing" on page 64.



- **To edit tapes using the synchronized editing function**

→ See "Synchronized Editing" on page 67.

You can also use the synchronized editing function to perform assemble editing and insert editing if your another VCR has a control L connector. Using this function controls both the playback VCR and the recording VCR simultaneously.

- **To add narration and background music to previously recorded tape**

→ See "Adding Audio or Narration (Audio Dubbing)" on page 77.

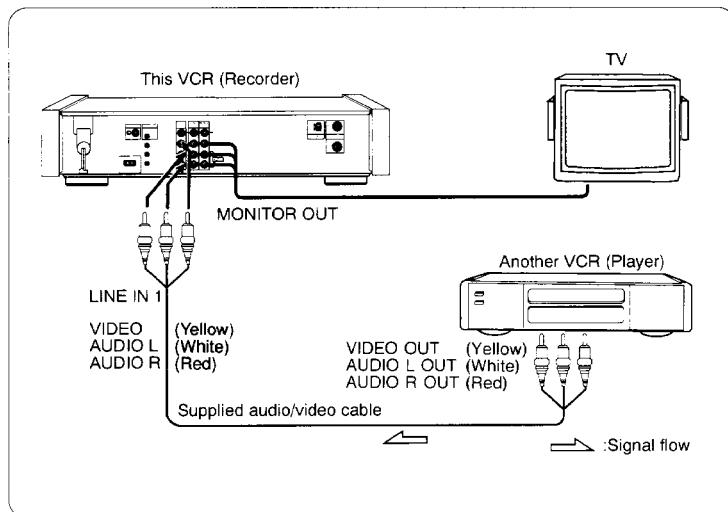
# Tape Dubbing

## Editing from Another VCR

Here's how to edit from another VCR (such as an 8mm video camera recorder or a VHS-format VCR for playback) when using this VCR for recording. You can use the jacks located on the front panel or rear panel to perform this operation.

## Connections

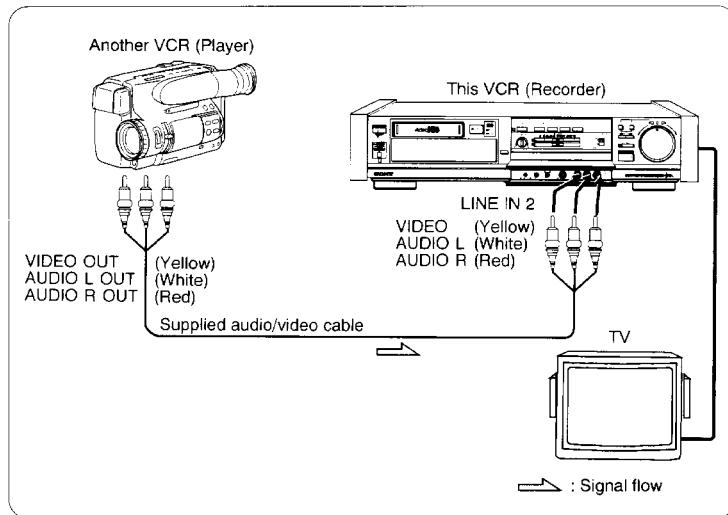
### When using the rear panel jacks

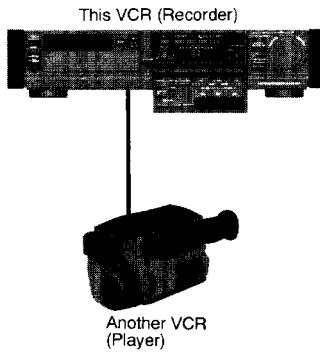


### Notes

- When connecting the VCRs, do not connect both LINE IN (1 or 2) and LINE OUT jacks on your VCRs simultaneously. Doing so may cause a humming noise.
- To avoid deterioration of picture quality, remember to switch on the EDIT function of another VCR if another VCR has one.
- If your playback VCR is a monaural unit, connect the white plug to LINE IN 2 AUDIO L on this VCR. This lets you record the sound of the playback VCR on both channels of this VCR. Do not connect any plug to LINE IN 2 AUDIO R.
- When you use the VIDEO IN jack and S VIDEO IN connector at the same time, the S VIDEO IN connector takes priority.

### When using the front panel jacks





## Before you begin

- Select the tape speed (SP or LP) with TAPE SPEED.
- Press the INPUT SELECT button to select LINE IN 1 or LINE IN 2.  
(When connected to the rear panel, select LINE IN 1. When connected to the front panel, select LINE IN 2).  
L1 or L2 appears in the display window of the VCR.
- Adjust the REC LEVEL control so that the red index mark stays at position 5.
- Press the EDIT button so that "EDIT" appears in the display window of the VCR.

### Note

If your playback VCR has also an editing function, select it to reduce static and improve reception.

## Operation

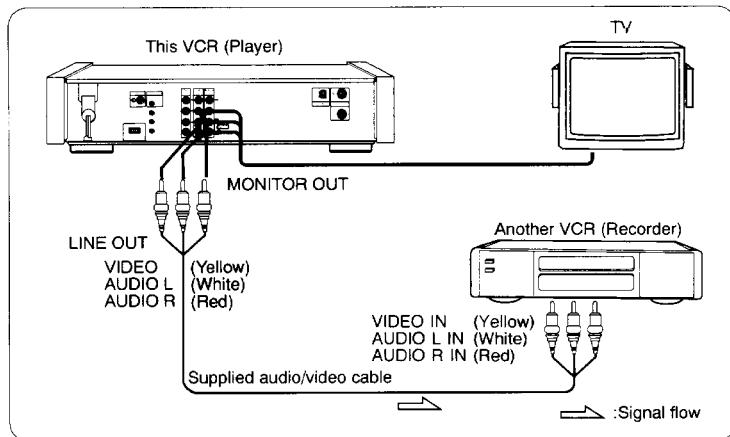
- 1 Insert a blank cassette into this VCR (recorder).
- 2 Turn on another VCR (player) and insert a source cassette.
- 3 Locate the playback starting point and select the playback pause mode on another VCR (player).
- 4 Locate the recording starting point and select the recording pause mode on this VCR (recorder).
- 5 Press ■ PAUSE on both VCRs.  
For best result, press ■ PAUSE on another VCR (player) just before pressing ■ PAUSE on this VCR (recorder).  
When you've finished editing, press ■ STOP on both VCRs.

#### Notes:

- If your recording VCR is equipped with the S VIDEO INPUT connector, you can use supplied S VIDEO connecting cable to connect to the S VIDEO OUT connector.
- If your recording VCR is a monaural unit, make connections using the VCM-910MS/920MS cable (not supplied).
- When connecting the VCRs, do not connect both LINE IN and LINE OUT jacks on your VCR simultaneously. Doing so may cause a humming noise.

## Editing onto Another VCR

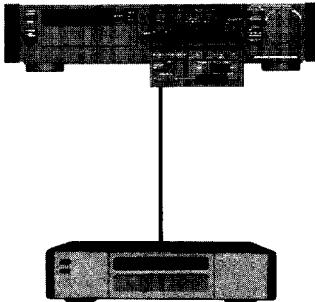
Here's how to use this VCR as the playback VCR and another VCR as the recording VCR.



## Before you begin

- Press the EDIT button so that the EDIT indicator lights up in the display window of the VCR.  
If your recording VCR has an editing function, it should also be selected to improve reception.
- Make sure that the audio/video cables are connected to the LINE OUT jacks. If they are connected to the MONITOR OUT jacks, the on-screen display will be recorded.

This VCR (Player)



## Operation

- 1 Turn on another VCR (recorder) and insert a blank cassette.
- 2 Insert a source cassette into this VCR (player).
- 3 Locate the playback start point and select the playback pause mode on this VCR (player).
- 4 Locate the recording start point and select the recording pause mode on another VCR (recorder).
- 5 Press **II PAUSE** on both VCRs.  
For best results, press **II PAUSE** on this VCR (player) just before pressing **II PAUSE** on another VCR (recorder). When you've finished editing, press **■ STOP** on both VCRs.

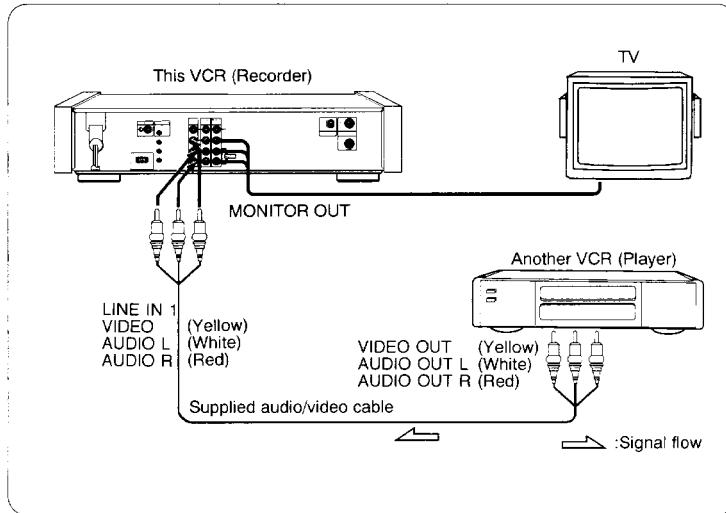
# Assemble Editing/Insert Editing

When connecting to the equipment with the LANC connector, you can take advantage of the synchronized editing function. For the synchronized editing operation, see page 67.

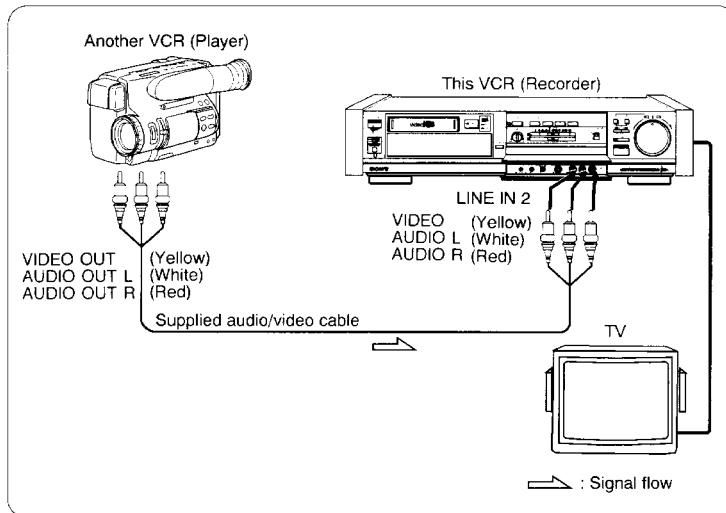
## Connections

You can use the jacks located on the front panel or rear panel to perform this operation.

### When using the rear panel jacks



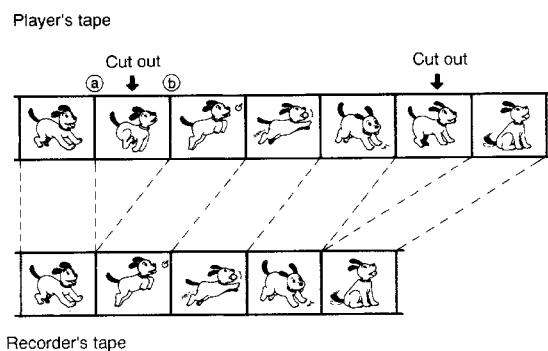
### When using the front panel jacks



# Assemble Editing

## Before you begin

- Select the tape speed (SP or LP) with the TAPE SPEED button.
- Press the INPUT SELECT button to select LINE IN 1 or LINE IN 2.  
(When connected to the rear panel, select LINE IN 1. When connected to the front panel, select LINE IN 2.)  
L1 or L2 appears in the display window of the VCR.
- Adjust the REC LEVEL control so that the red index mark stays at position 5.



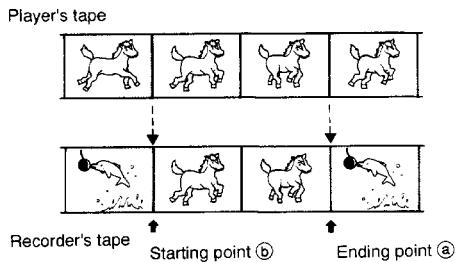
## Operation

- 1 Insert a recorded cassette into another VCR and a cassette for recording into this VCR.
- 2 Record on this VCR while viewing the playback picture of another VCR and have the VCR enter recording pause mode at the point (point ①) where you want to cut out.
- 3 Release the recording pause at the point where you want to start recording again (point ②).
- 4 Repeat steps 2 and 3 to make a newly composed tape.

## Insert Editing

### Before you begin

- Select the tape speed according to the tape speed in which the recorded cassette was done.
- Press the INPUT SELECT button to select LINE IN 1 or LINE IN 2.  
(When connected to the rear panel, select LINE IN 1. When connected to the front panel, select LINE IN 2.)  
L1 or L2 appears in the display window of the VCR.



## Operation

- 1 Insert a recorded cassette into another VCR and a cassette for recording into this VCR.
- 2 Locate the editing end point (Ⓑ) by playing back the cassette on this VCR and press the COUNTER RESET button.  
The counter reads "0H00M00S".
- 3 Rewind the tape on this VCR and put the VCR in recording pause mode at the editing start point (Ⓐ).
- 4 Play back on another VCR and put it in playback pause mode at the point where the picture to be inserted appears on the screen.
- 5 Release recording pause mode of this VCR and playback pause mode of the other VCR simultaneously.
- 6 Press the STOP button of this VCR to stop the recording at the editing end point (counter reading reaches to 0H00M00S) set in step 2.
- 7 Press the STOP button of the other VCR (player) to stop the playback.

# Synchronized Editing

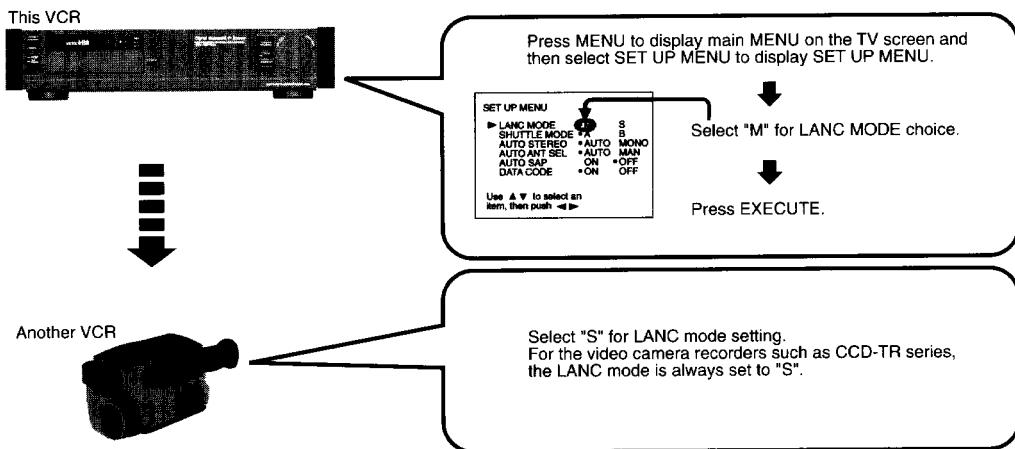
If your another VCR has control L or S connector, you can take advantage of a feature called "Synchronized Editing" that controls both VCRs (recording VCR and playback VCR), and releases the pause when the SYNCHRO EDIT START/PAUSE button is pressed. To use this function, you must connect the control cable (LANC cable) in addition to the connections of the audio and video cables. There are two types of control cables: control L (REMOTE) cable and control S cable according to the type of connectors of the VCRs.

After you have made connections on page 68, you must set the LANC MODE and SHUTTLE MODE. For details, see page 70.

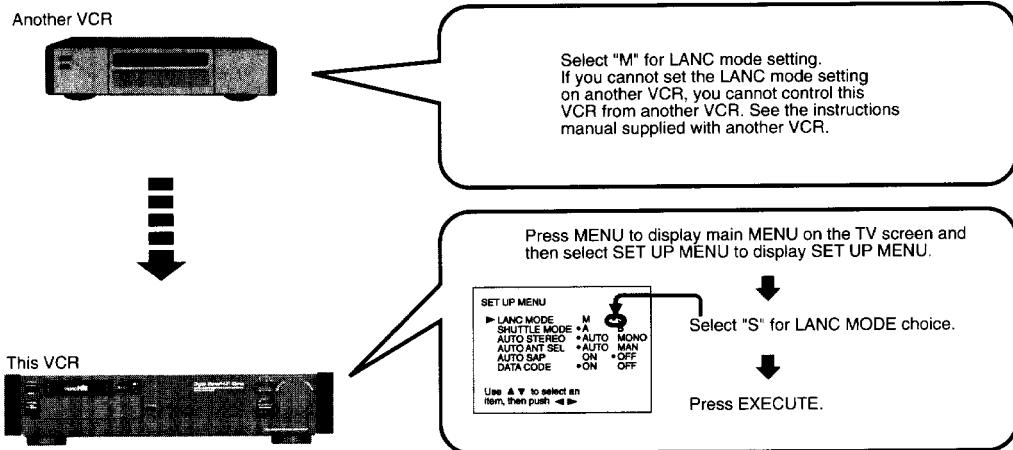
## Setting the LANC MODE

When you perform synchronized editing with the control L jack, remember to set the LANC MODE as described below. Be sure this setting is correct before you begin editing, since it decides which VCR controls which. For details, refer to page 70.

### When you want to control another VCR from this VCR

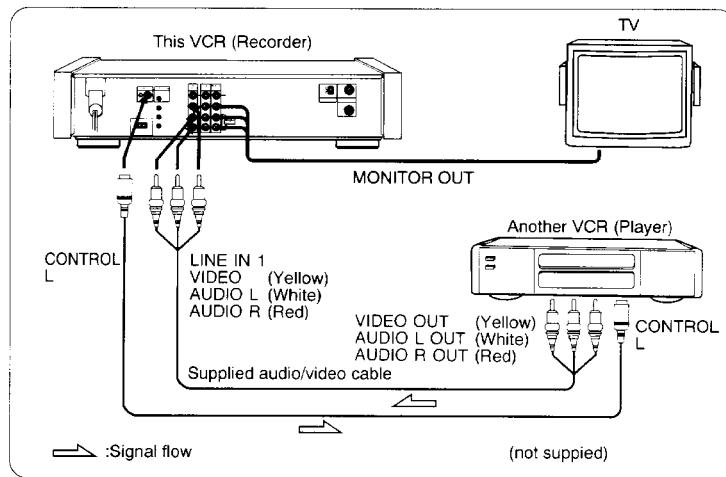


### When you want to control this VCR from another VCR



# Connecting Video Equipment with the LANC connector

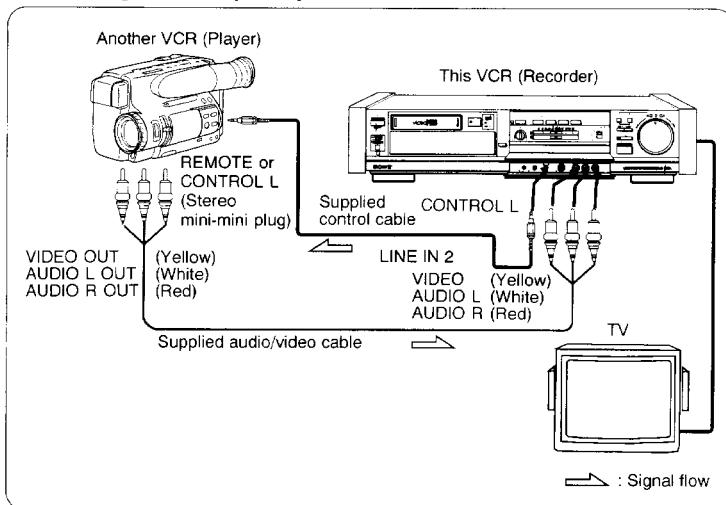
## When using the rear panel jacks



### Notes

- When connecting the VCRs, do not connect both LINE IN and LINE OUT jacks on your VCRs simultaneously. Doing so may cause a humming noise.
- If your playback VCR is a monaural unit, connect the white plug to LINE IN 2 AUDIO L on this VCR. This lets you record the sound of the playback VCR on both channels of this VCR. Do not connect any plug to LINE IN 2 AUDIO R.
- If another VCR has both the LANC connector and the CONTROL S connector, use the LANC connector. Do not make the LANC and CONTROL S connections simultaneously.
- When connecting with a video camera recorder such as CCD-V801, you can take advantage of more precise synchronized editing function.

## When using the front panel jacks



### About the (LANC)

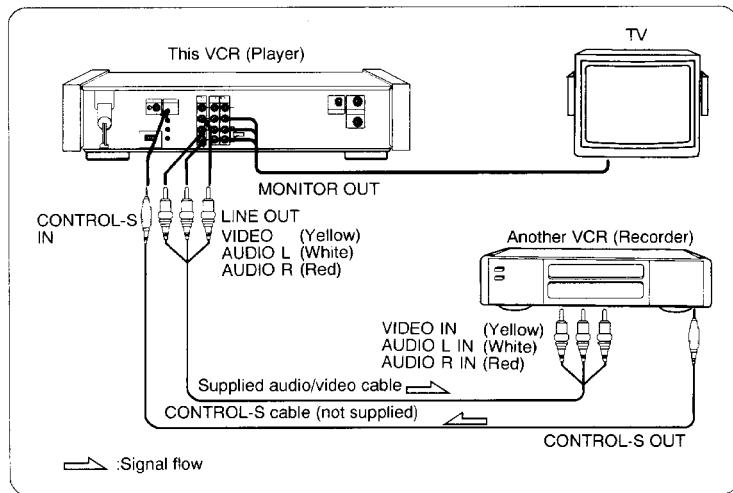
LANC stands for Local Application Control System.

The LANC connector is used for controlling the tape transport of video equipment and peripherals connected to it. This connector has the same function as the connectors indicated as CONTROL L or REMOTE.

## Connecting Video Equipment with the CONTROL S connector

You can use this connection only on the rear panel.

You cannot control another VCR from this VCR, using this connection.

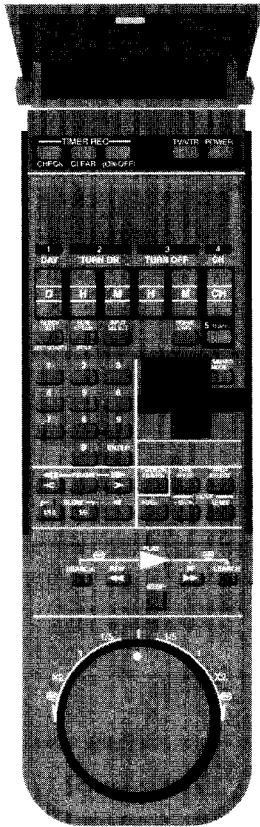


### When using the CONTROL S cable

Set the commander mode of this VCR and another video equipment to the same position.

If another video equipment has the synchronized function, use the SYNCHRO EDIT button on another equipment.

Comparing to the synchronized editing using the LANC connector, the synchronized editing using the CONTROL S connector only enables you to pause both VCRs and release the pause mode of both VCRs.



## LANC MODE and SHUTTLE MODE Settings

After you have made the control L cable connection, you must perform the LANC MODE and SHUTTLE MODE setting. Use the SET UP MENU for both settings. For how to call up the SET UP MENU and set items, see page 28. The followings are how to select each option in the SET UP MENU.

**1** Press MENU to display the SET UP MENU.

**2** Set LANC MODE.

M: to control another VCR with this VCR.

S: to control this VCR with another VCR or Editing Controller.

**3** Set SHUTTLE MODE.

A: used when another VCR does not have a reverse slow motion playback. (For example, CCD-TR series and EV-S550)

B: used when another VCR has reverse slow motion playback. (For example, CCD-V701/V801 and EV-S900)

**4** Press EXECUTE to return to the original screen.

SET UP MENU	
► LANC MODE	• M      S
► SHUTTLE MODE	• A      B
AUTO STEREO	• AUTO    MONO
AUTO GND SEL	• AUTO    MAN
AUTO SAP	• ON      OFF
DATA CODE	• ON      OFF

Use **A** **V** to select an item, then push **◀▶**

# Synchronized Assemble Editing

You can display both the pictures of the playback VCR and recording VCR alternately on the TV screen. This allows you to perform editing while previewing editing scenes.

## Before you begin

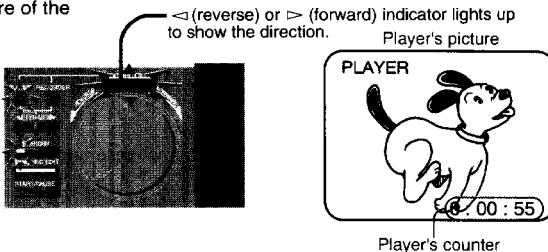
- Press the TAPE SPEED button to select the tape speed (SP or LP).
- Press the INPUT SELECT buttons to select LINE IN 1 or LINE IN 2.  
(When connected to the rear panel, select LINE IN 1. When connected to the front panel, select LINE IN 2).  
L1 or L2 appears in the display window of the VCR.
- Check the LANC MODE and SHUTTLE MODE settings (see page 70).

---

**1** Insert a recorded cassette into another VCR and insert a cassette for recording into this VCR.

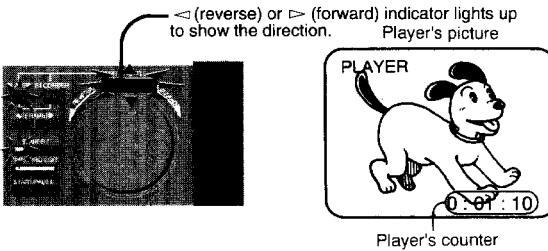
**2** Press SYNCHRO EDIT STANDBY.

This VCR (recorder) will enter recording pause mode, another VCR (player) enters playback pause mode. The PLAYER indicator on the front panel of this VCR lights up and the picture of the playback VCR is displayed on the screen.



---

**3** Locate the starting point where you want to begin editing, using the EDIT SHUTTLE ring and the FRAME buttons.



One press on FRAME **II** **►** advances one frame while one press on **◀** **II** reverses one frame.

For the VCR on which you have set SHUTTLE MODE "A" (see page 70), a frame advance in the reverse direction, reverse slow motion playback, reverse normal speed and reverse double speed playback may not be possible. In this case, rewind the tape a little from the scene where you want to begin editing and search for the starting point by playing back the tape at normal speed or forward slow motion or forward frame advance.

(Continued)

→ When you have decided the starting point, switch to the "recorder side".

---

**4 Press RECORDER.**

The RECORDER indicator lights up and the picture of the recording VCR appears on the TV screen.

RECORDER

On the VCR

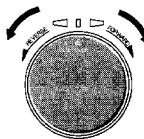


Recorder's picture



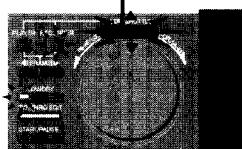
Recorder's counter

**5 Locate the recording starting point with the EDIT SHUTTLE ring or the FRAME buttons on the VCR.**

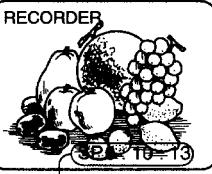


◀ FRAME ▶

On the VCR



◀ (reverse) or ▶ (forward) indicator lights up to show the direction.



Recorder's counter

One press on FRAME ▶ advances one frame while one press on ◀ reverse one frame.

→ If you want to select another playback picture after the recording starting point is determined, change over to the playback VCR by pressing the PLAYER button.

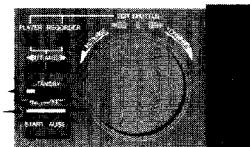
---

**6 Press SYNCHRO EDIT START/PAUSE.**

The pause mode of the playback VCR and the recording VCR are released.

SYNCHRO EDIT  
START/PAUSE

On the VCR



Player's picture (during recording)



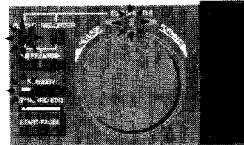
Recorder's counter

- 
- 7 Press SYNCHRO EDIT START/PAUSE at the scene where you want to stop recording.

The playback VCR and the recording VCR enter pause mode.



On the VCR



Player's picture



Player's counter

---

#### To edit another scene

Repeat steps 3 through 7.

#### To stop editing

Press SYNCHRO EDIT STANDBY.

#### Notes:

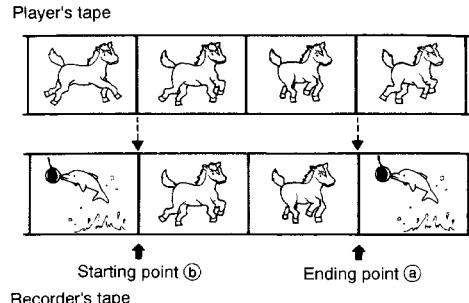
- If you continue to press FRAME buttons, the VCR plays back the cassette at a speed of 1/30 or normal playback.
- While the RECORDER indicator is on, pressing the RECORDER button a second time will stop the playback VCR and the recording VCR.
- While the PLAYER indicator is on, pressing the PLAYER button a second time will stop the playback VCR and the recording VCR.
- It takes about two or three seconds to reverse the direction in frame-by-frame picture.

# Synchronized Insert Editing

You can display both the pictures of the playback VCR and recording VCR alternately on the TV screen. This allows you to perform editing while previewing editing scenes.

## Before you begin

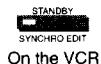
- Select the tape speed according to the tape speed of the recorded cassette.
- Press the INPUT SELECT button to select LINE IN 1 or LINE IN 2.  
(When connected to the rear panel, select LINE IN 1. When connected to the front panel, select LINE IN 2).  
L1 or L2 appears in the display window of the VCR.
- Check the LANC MODE and SHUTTLE MODE settings (see page 70).



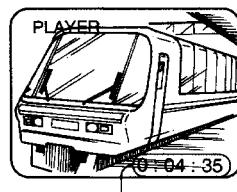
## Operation

- 
- 1** Insert a recorded cassette into another VCR and a cassette for recording into this VCR.

- 2** Press SYNCHRO EDIT STANDBY.  
This VCR (recorder) enters recording pause mode and the other VCR (player) enters playback pause.  
The PLAYER indicator of this VCR lights up and the player's picture is displayed on the TV screen.



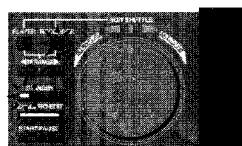
Player's picture



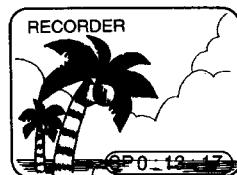
Player's counter

⇨ Switch to the recorder side.

- 
- 3** Press RECORDER.  
The RECORDER indicator lights up and the recorder's picture is displayed on the TV screen.  
This VCR enters playback pause mode.

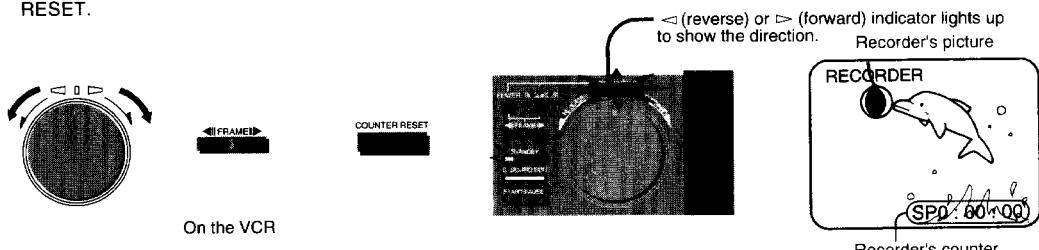


Recorder's picture

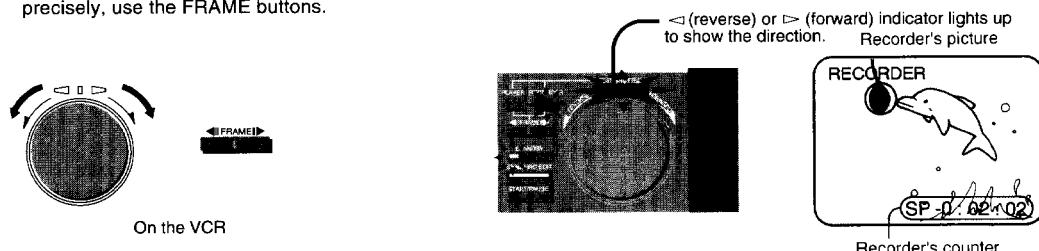


Recorder's counter

- 
- 4 Locate the editing end point (point **(a)**) with the EDIT SHUTTLE ring and the FRAME buttons on this VCR, and press COUNTER RESET.



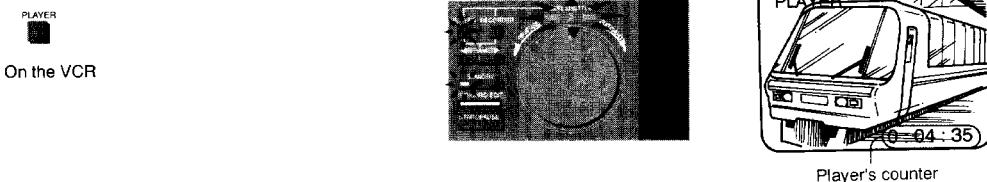
- 
- 5 Rewind the tape to the editing starting point (point **(b)**) with the EDIT SHUTTLE ring on this VCR. If you want to locate more precisely, use the FRAME buttons.



→ Switch to the player side after you have located the editing starting point (point **(b)**).

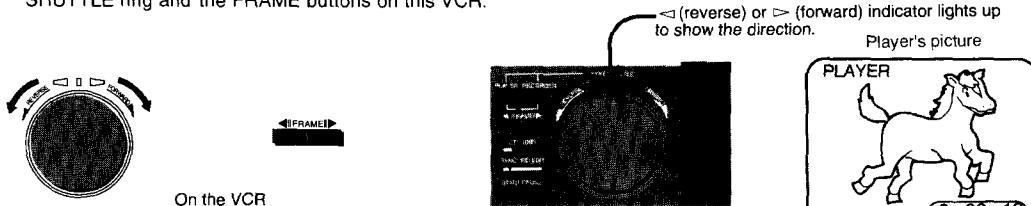
---

- 6 Press PLAYER.  
The PLAYER indicator lights up and the player's picture is displayed on the TV screen.



(Continued)

- 
- 7** Locate the beginning of the scene to be inserted with the EDIT SHUTTLE ring and the FRAME buttons on this VCR.

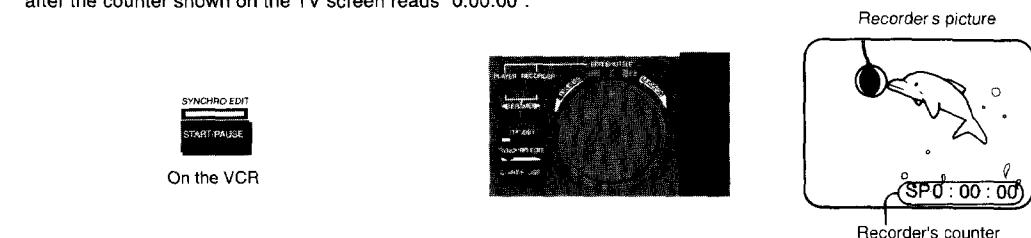


One press on FRAME **II** advances one frame while one press on **II** reverses one frame.

For the VCR on which you have set SHUTTLE MODE "A" (see page 70), a frame advance in the reverse direction, reverse slow motion playback, reverse normal speed and reverse double speed playback may not be possible. In this case, rewind the tape a little from the scene where you want to begin editing and search for the starting point by playing back the tape at normal speed or forward slow motion or forward frame advance.

- 
- 8** Press SYNCHRO EDIT START/PAUSE.

The pause mode of the player and the recorder is released.  
Both the player and the recorder enter pause mode immediately after the counter shown on the TV screen reads "0:00:00".



---

#### To edit another scene

Repeat steps 3 through 8.

#### To stop editing

Press SYNCHRO EDIT STANDBY.

#### To edit without the counter function

When you've located the beginning of the scene to be inserted, press SYNCHRO EDIT/START PAUSE to release the pause.

# Adding Audio or Narration (Audio Dubbing)

You can additionally record narration or background music on the PCM track on the tape while the picture and sound previously recorded on the standard track are left unchanged.

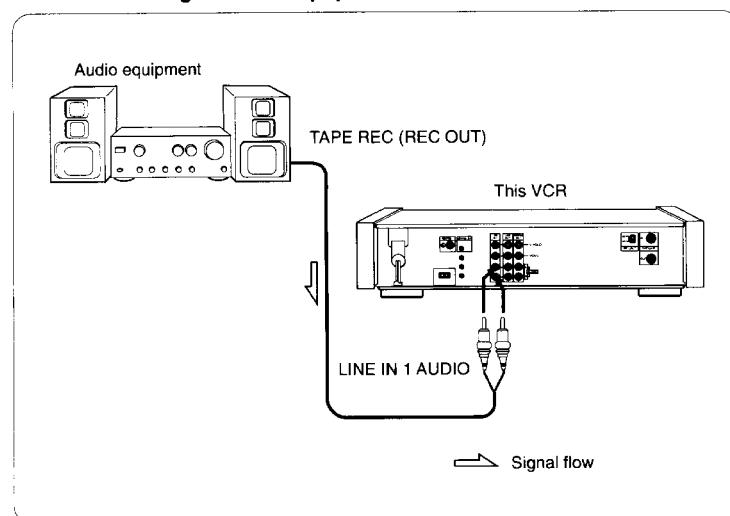
The sound coming from the microphone is recorded in monaural.

If you want to connect an audio equipment, use the audio in jacks.

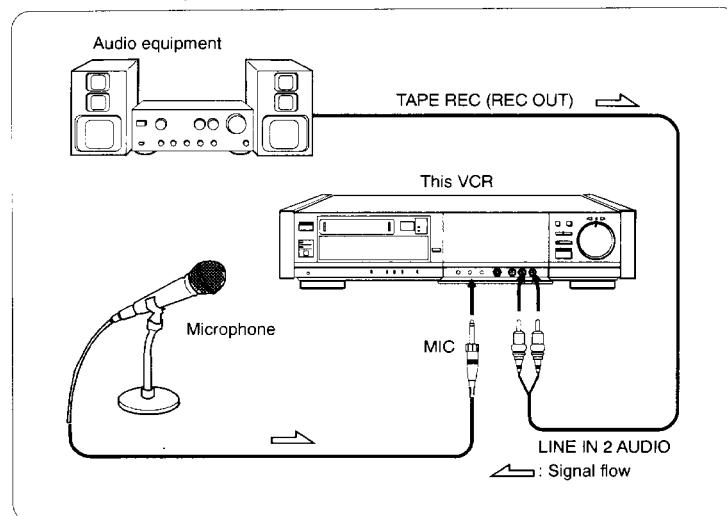
If you want to connect a microphone, use the MIC jack on the front.

## Connections

### When connecting to audio equipment



### When connecting a microphone



#### Tips for audio dubbing

- When you want the sound to fade in, slide the REC LEVEL control from the 0 (zero) position to the normal position gradually. To fade out, slide the REC LEVEL control from the normal position to the 0 (zero) position. (This only works for line input audio sources.)
- The sound from the LINE IN 1 AUDIO jacks on the rear panel or LINE IN 2 AUDIO jacks on the front panel and the MIC jacks can be mixed.
- Adjust the REC REVEL control so that the sound already recorded on the standard track and the sound to be newly added on the PCM track are balanced.

## ***Before you begin***



- Press the INPUT SELECT buttons to select LINE IN 1 or LINE IN 2.  
(When connected to the rear panel, select LINE IN 1. When connected to the front panel, select LINE IN 2).  
L1 or L2 appears in the display window of the VCR.
- Adjust the REC LEVEL control to an appropriate level while observing the peak level meter.
- To monitor the audio-dubbed sound, set the AUDIO MONITOR selector to PCM.  
During audio dubbing, the sound recorded on the standard track is not heard.



or



## ***Operation***

- 1 Insert a cassette.
- 2 Play back the cassette and determine the point where you want to begin audio dubbing. Press **II PAUSE** to pause playback.
- 3 Press **AUDIO DUB**.
- 4 Play back the audio source and adjust the REC LEVEL control.

- 5 Press **II PAUSE** to release pause mode.  
The picture is played back and the sound is recorded.

### **To stop audio dubbing**

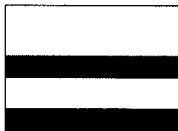
Press **■ STOP**.

### **To dub sounds from the tuner of this VCR**

Press the INPUT SELECT button to select the "TUNER" indication. The other operations are the same as the above.

#### **Notes:**

- The dubbed sound cannot be played back on a VCR without PCM recording or playback functions.
- The pre-recorded sound on the PCM track will be erased by dubbing.
- Do not use a plug-in power microphone.
- During PCM audio dubbing, black streaks appear at the bottom of the screen and in the center of the screen. These streaks will not be recorded on the tape.



- The picture may shake or the color may become black and white depending on your TV.

# Technical Information

## Hi8 (High Eight) Video System

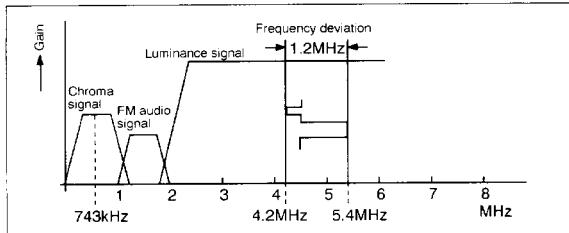
The 8mm video system employs a metal powder tape. This means the video recorder is capable of recording a large amount of information and enhances picture quality. The Hi8 video system was developed utilizing the advantages of the 8mm video system. (See the diagrams below.) The main characteristics of the Hi8 video system are as follows:

### Characteristics of Hi8 System

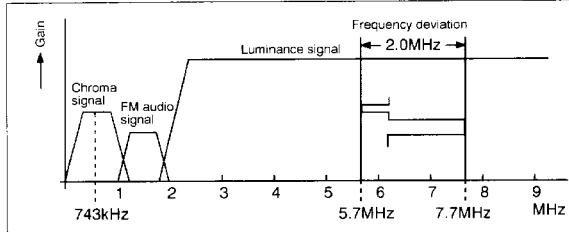
#### • Super high quality picture

The information capacity is a key element for picture improvement. It can be increased by shifting up the FM carrier frequency range. In the Hi8 video system, the FM carrier frequency range of the luminance signal is shifted up to 5.7-7.7 MHz. This is higher than the 4.2-5.4 MHz range of the standard 8mm video system. Consequently, the horizontal resolution is improved to 400 lines.

Frequency allocation of the standard 8mm video system



Frequency allocation of the Hi8 video system



#### • Use of high grade tape to match the Hi8 video system

Metal tape for the Hi8 video system is ideal because it has large magnetic energy which permits high-density recording. The Hi8 VCR uses such high-grade tapes for the Hi8 video system, covering a wide frequency range, to achieve a high-quality video signal for recording/playback.

#### • S-VIDEO (separate luminance/chroma signal) input/output connectors

Conventionally, the video signal exchanged between TV set and video equipment or among several video equipment is called a composite video signal, in which luminance (Y) signal and chroma (C) signal are mixed. In this system the composite video signal is liable to produce interference, resulting in picture quality loss. To avoid this picture quality loss, an S-VIDEO connector can transmit and receive the video signal separated into the luminance signal and the chroma signal. With the separated video signal flicker and color blur in the picture are minimized and sharpness is enhanced to such an extent that hair and fine stripes are clearly visible. The S-VIDEO connector also assures an excellent editing quality with minimum picture quality loss.

#### • Tape speed

The Hi8 video system uses the same tape speed as the standard 8mm video system. An E6-120 (or P6-120) allows four hours of recording and playback in LP mode.



### Recording and Playback in the Hi8 Video System

To take advantage of the EV-S3000 Hi8 video system, you must use Hi8 video tapes for recording and playback.

You can use the EV-S3000 to record and playback standard 8mm video tapes, if Hi8 quality is not necessary. (The Video 8 and standard 8mm systems are often referred to as "normal" mode.)

The EV-S3000 automatically detects the type of video system (standard 8mm or Hi8) in which the tape was recorded and plays the tape back accordingly.

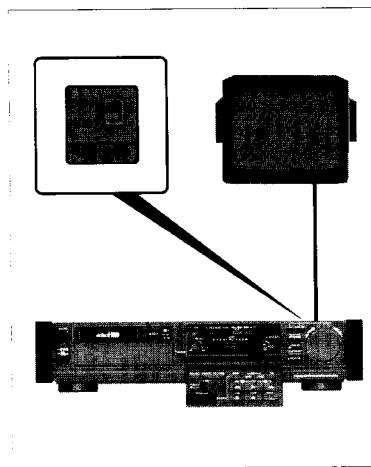
To make the most out of the Hi8 video system, select "Hi8 AUTO" on the PICTURE ADJUST menu. In this way, the EV-S3000 records in the Hi8 video system (see "Selecting Recording System" on page 54).

### Compatibility with conventional video recorder decks

Tapes recorded using the Hi8 video system cannot be played back on conventional 8mm video equipment (standard 8mm video system).

# General Setup Information

## Setting the RF UNIT



If you connect a TV or color monitor equipped with A/V input jacks, skip this adjustment.

### Why this setting is necessary:

You must set the RF UNIT selector at the rear of the VCR properly so that your TV can receive the correct signal from the VCR. Set the selector to 3 CH (Ch 3) or 4 CH (Ch 4), whichever is not active in your area.

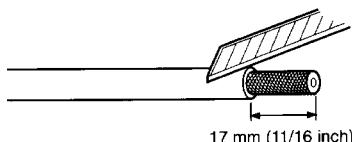
- 1 Set the RF UNIT at the rear of the VCR to 3 CH or 4 CH, whichever is not used in your area.**
- 2 Press POWER.**  
The power indicator lights up on the front panel.
- 3 Press TV/VTR.**  
The VTR indicator lights up in the display window.
- 4 Check that the TUNER indicator appears in the display window, then select an active channel in your area by pressing CHANNEL/INDEX +/-.**
- 5 Turn on your TV and set it to the channel you selected in step 1.**  
Your TV is now tuned to the VCR. Whenever you use the VCR, set the TV to the preselected channel.

### Note:

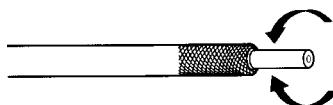
For details on adjusting TV channels, see your TV instruction manual.

## Attaching an F-type Connector (not supplied)

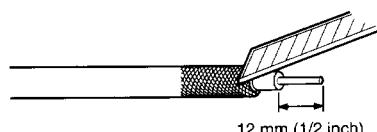
**1 Strip 17 mm (11/16") of the black polyvinyl jacket.**



**2 Fold back the woven wire.**



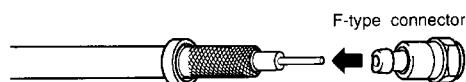
**3 Strip 12 mm (1/2") of the white plastic casing, leaving 12 mm of the center conductor.**



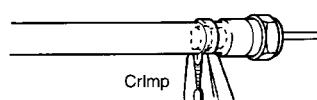
**4 Slip the crimping ring over the cable.**



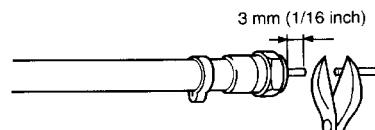
**5 Insert the inner conductor into the F-type connector shaft and push the end of the cable into the connector as far as it will go.**



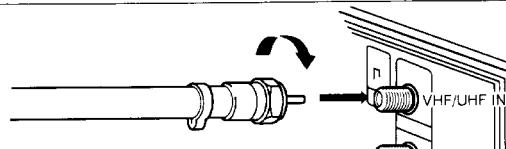
**6 Slide the crimping ring over this assembly. Pinch the crimping ring with pliers to hold the connection in place.**



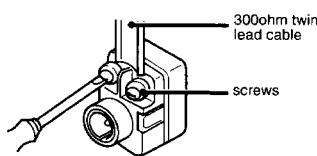
**7 Cut the center conductor leaving 3 mm (1/6") from the end.**



**8 Insert the F-type connector into VHF/UHF IN plug on the VCR.**

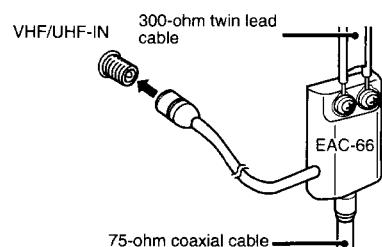


## Attaching the External Antenna Connector (supplied)



- 1 Loosen the screws on the antenna connector.
- 2 Fit the 300-ohm twin lead cable on the UHF antenna under the screws on the antenna connector.
- 3 Retighten the screws.

## Attaching the EAC66 U/V Band Separator/Mixer (not supplied)



- 1 Loosen the screws on the U/V band separator/mixer.
- 2 Fit the 300-ohm twin lead cable on the UHF antenna under the screws.
- 3 Connect the 75-ohm coaxial cable to the U/V band separator/mixer.
- 4 Connect the U/V band separator/mixer to the VHF/UHF IN plug on the VCR.

# Troubleshooting

If you have a problem with your VCR, first check the power cord connection, then go through the following list. Should the difficulty persist, unplug the unit and contact your Sony dealer or local authorized Sony Service Center facility.

	<b>Symptom</b>	<b>Possible causes and remedies</b>
<b>Power</b>	The POWER switch doesn't work.	<ul style="list-style-type: none"><li>● The power cord is disconnected.</li><li>● The VCR is in timer standby mode.</li></ul>
<b>Time and Date Clock</b>	The clock has stopped and "— : —" lights up.	<ul style="list-style-type: none"><li>● There has been a power interruption. Reset the time, date and timer settings. Then transmit set data to the VCR.</li></ul>
<b>TV Reception</b>	The reception is poor.	<ul style="list-style-type: none"><li>● The channel for the VCR is not correctly tuned on the TV.</li><li>● The TV signal is weak. Adjust the direction of the antenna.</li><li>● The AC power cord of the VCR is disconnected.</li></ul>
<b>Recording and Playback</b>	Shaky and/or snowy picture during recording.	<ul style="list-style-type: none"><li>● The TV's channel is not set to the one preset for the VCR.</li><li>● The TV signal is weak. Adjust the direction of the antenna.</li></ul>
	No picture on the TV screen.	<ul style="list-style-type: none"><li>● Press TV/VTR so that the VTR indication appears in the display window.</li><li>● The channel is not set to, Ch 3 or Ch 4 or the video input has not been selected at the monitor.</li><li>● Make firm connection of S VIDEO connector.</li><li>● Clean the video heads. (See page 86.)</li></ul>
	The VCR won't record.	<ul style="list-style-type: none"><li>● No cassette has been inserted.</li><li>● The cassette is at its end.</li><li>● INPUT SELECT is not set correctly.</li><li>● Remove the S video connecting cable from the S VIDEO IN when the cable is not used.</li></ul>
	The playback picture is not clear.	<ul style="list-style-type: none"><li>● The channel for the VCR is not correctly tuned on the TV.</li><li>● The video heads are dirty. Clean the heads using the Sony V8-25 CLH Video head cleaning cassette. For details on cleaning, refer to the instructions furnished with the cleaning cassette. If a cleaning cassette is not available in your area, have the heads cleaned at your nearest Sony Service Center facility. (Do not use a commercially available wet-type cleaning cassette. It may damage the video heads.)</li><li>● The video heads are worn out.</li><li>● Select SHARPNESS to adjust its setting to your preference in the PICTURE ADJUST display.</li></ul>
	Noisy picture	<ul style="list-style-type: none"><li>● Place the VCR away from a TV.</li><li>● Tape is defective. Use a new cassette.</li></ul>
	The picture moves vertically during picture search mode.	<ul style="list-style-type: none"><li>● Adjust the vertical hold control on the TV or color monitor.</li></ul>
	The sound drops out.	<ul style="list-style-type: none"><li>● The cassette is defected. Use a new video cassette.</li></ul>
	Stereo recording cannot be made.	<ul style="list-style-type: none"><li>● AUTO STEREO is set OFF in the SET UP MENU.</li><li>● A reception signal is not strong enough, and a stereo signal is received in monaural.</li></ul>
	Both main and SAP sounds are heard or no SAP sound is heard when playing back a cassette on which a multi-channel TV sound (MTS) broadcast was recorded.	<ul style="list-style-type: none"><li>● AUDIO MONITOR selector is set to MIX or to PCM. Set AUDIO MONITOR selector to STD.</li></ul>
	A cassette is ejected if the REC button is pressed.	<ul style="list-style-type: none"><li>● Check the safety tab.</li></ul>

(continued)

	<b>Symptom</b>	<b>Possible causes and remedies</b>
<b>Timer Recording</b>	Timer setting cannot be made.	<ul style="list-style-type: none"> <li>• The current time has not been preset.</li> </ul>
	The TIMER REC (recording) indicator is not lit even though you've pressed TIMER REC (ON/OFF).	<ul style="list-style-type: none"> <li>• No cassette has been inserted.</li> <li>• The cassette is at its end.</li> <li>• No setting for timer-recording has been made.</li> </ul>
	The cassette is ejected when performing a timer setting.	<ul style="list-style-type: none"> <li>• The safety tab of the cassette is slid out.</li> </ul>
	Timer recording was not made.	<ul style="list-style-type: none"> <li>• There has been a power interruption of one hour or more.</li> <li>• TIMER REC (ON/OFF) was not pressed.</li> <li>• Date and clock setting is not correct.</li> </ul>
<b>Data Screen</b>	The data screen does not appear on the screen.	<ul style="list-style-type: none"> <li>• Press DATA SCREEN.</li> <li>• Check to see if you connect your TV to the MONITOR OUT jacks.</li> </ul>
<b>Others</b>	Cassette cannot be inserted.	<ul style="list-style-type: none"> <li>• A cassette has already been inserted.</li> </ul>
	The Remote Commander cannot be operated.	<ul style="list-style-type: none"> <li>• The COMMAND MODE has not been set correctly. Set the COMMAND MODE on the VCR and the Remote Commander to the same number, for example, "VTR 2".</li> <li>• The batteries are low.</li> </ul>
	A short beep sounds repeatedly and (ON SCREEN HELP) appears on the TV screen.	<ul style="list-style-type: none"> <li>• An illogical operation has been tried. See the "On-Screen Help Messages" (page 85).</li> </ul>
	The VCR does not respond when you press any button.	<ul style="list-style-type: none"> <li>• The built-in microprocessor may be defective. Pressing the CL (clear) button inside the front panel with a pointed object such as a ballpoint pen, may fix the problem. All stored information (e.g., the clock and any preset programs) will be cleared.</li> </ul>
	When you perform synchronized editing, you cannot control this VCR from another VCR.	<ul style="list-style-type: none"> <li>• The LANC mode of another VCR is set to M.</li> <li>• The LANC mode of this VCR is set to S.</li> </ul>

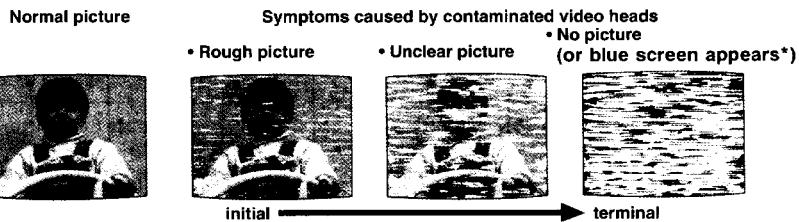
# On-Screen Help Messages

Please put in a cassette	The tape is rewound
Please stop the tape	This function cannot be changed
Please push INPUT SELECT	No timer recording has been set
Please transmit the data to the VCR again	Please connect PLAYBACK VCR with LANC cable, then set the PLAYBACK VCR LANC MODE to "S"
Please set the clock	There is no cassette in the PLAYBACK VCR. Please put in a cassette
Timer program is full	Please stop the PLAYBACK VCR
Tab on the cassette is locked	The tape in the PLAYBACK VCR is at the end
Please rewind or put in a new cassette	Please turn off the power switch then turn on again
No timer recording has been set	It is not possible to execute SYNCHRO EDIT
VCR is recording	Please check NORMAL/CATV

# Taking Care of Your EV-S3000

## Video Head Cleaning

When playback pictures are noisy and hardly visible, or when no picture or blue screen appears, the video heads may be contaminated. In such a case, clean the video heads using video head cleaning tape V8-25CLH (not supplied) or ask Sony service personnel to clean the video heads.



\* Blue screen appears when your TV is connected to the MONITOR OUT jacks.

## Worn Video Heads

If the VCR displays a poor picture after you clean the video heads, you may need to replace them. Consult your dealer or the Sony Service Center nearest you.

## Check the Video Heads after 1,000 Hours of Use

This VCR is a high-precision machine. It must record on or play back from magnetic tapes on which the image signals from the color TV or the video camcorder are recorded.

The video head or mechanical parts for transporting the tape become contaminated or worn after extended use. You should have the VCR checked (cleaning, oiling and replacing of worn parts) after each 1,000 hours of use.